BURMA GAZETTEER

KYAUKSE DISTRICT

VOLUME A

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VOLUME A

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PREFACE.

THE greater part of this Gazetteer was written by Mr. Ralph Neild. Much of the material was collected by Mr. H. F. Searle. Chapter II was written by me and Chapter X contains pages from all three pens. Grateful acknowledgment is due to the following gentlemen for contributions: Mr. E. H. Pascoe, officiating Director, Geological Survey of India; Mr. R. E. Barber, Superintendent of Police, Kyauksè; Mr. A. B. Nixon, Divisional Forest Officer, Meiktila; Mr. P. B. Quinlan and Maung Su of the Educational Department; Messrs. C. C. Mackintosh, P. Lowson, and K. M. MacDowell of the Irrigation Department. Much information has also been derived from Sirdar Zainul Abdeen Khan of Langwa; U Ba Thein, author of the Kokayaing Thamaing; Maung Myo, headman of Thalun; Bo Kaing of Inyaung; Maung Ba, ex-*myothugyi* of Myinzaing; Maung Maung Gywe of Kyauksè, ex-*sésaye*; Maung Ba, headman of Kyibya and ex-*penin*; Maung Myit, headman of Paukpingwe. The Wetmasut *Wundaukmin* was repeatedly referred to, and gave unstintingly from his rich store of learning and reminiscence. Maung Maung, Clerk in the Settlement Office, was employed on Gazetteer work throughout and displayed great zeal in the search for manuscripts and inscriptions, some of which have been utilized in the historical chapter and elsewhere.

No apology is offered for our deficiencies. Readers (if any) will be few and friendly and the mass of material is so great that it could not be properly handled in the time at our disposal.

J. A. STEWART,
Settlement Officer, No. III Party.

KYAUKSÈ, 30*th April* 1922.

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BURMA GAZETTEER

THE

KYAUKSE DISTRICT

VOLUME A.

CHAPTER I.

PHYSICAL DESCRIPTION.

General; Boundaries; General Description; Rivers; Hills; Lakes; Climate; Rainfall; Geology; Fauna; Flora.

General. Kyauksè, the smallest district in Upper Burma, was created after the annexation of Upper Burma in 1886, when to the area which had been administered by the Kyauksè *wuns* in Burmese times, were added the village-tracts of Paleik, Sizôn, Sèywa, Inya, Tabetswè, Tetmyaw, and Ywathit, which had formed the charge of a *wundauk* of the Mandalay District, and an area west of the Samôn which had belonged to the Ava District. The district lies between 21° 9′ and 22° north latitude and 95° 57′ and 96° 58′ east longitude. Its area is 1,274 square miles and its population in 1921 was 142,677. Its name is taken from the town which forms the district headquarters and means "the stone weir."

Boundaries. Since its constitution by the British the boundaries of the district do not appear to have suffered any alterations. To the north it is bounded by the Myitngè River which divides it from Mandalay District. To the east it is bounded by the Shan States of Lawksawk and Maw; here the boundary line first runs south from the Myitngè through the mountains, then turns south-west, following the watershed between the Zawgyi and Myitngè basins, till it turns abruptly to the south, to follow the foot of the Shan Hills to the border of Meiktila District. On the south, the boundary is Meiktila District, and on the east the Myingyan and Sagaing Districts, the latter being divided from Kyauksè by the lower course of the Samôn River.

General Description. The district falls geographically into two divisions, the level plain, with an area of 563 square miles, which is continuous with the Myingyan and Sagaing Districts to the west, and the Yeyaman Hill-tract with an area of 711 square miles, which forms part of the Shan mountain system.

The plain is very gently inclined downward from south to north, and east to west, so that the general direction of its drainage is to the north-west. It appears to be formed of old alluvium deposited by the Irrawaddy when its course from Ava southwards was east of the Pegu Yomas, with more recent deposits from the Shan hills. Its level features are broken only by some five isolated rocky hills, which rise abruptly from the plain, and are covered with sparse jungle. Regarded from the point of view of agriculture, vegetation and scenery, this plain may be subdivided into two parts, the large irrigated area which lies between the Shan hills on the east and the Samôn River on the west, and the small dry area west of the Samôn bordering upon Meiktila and Myingyan Districts. A network of canals, fed by the Zawgyi and Panlaung Rivers, has for centuries watered the former area and rendered it highly productive. Thanks to them the district though it belongs climatically to the dry zone, produces in succession throughout the year a great variety of crops, most of which depend upon wet cultivation. The principal product of this irrigated area is paddy, chiefly *kaukkyi* but some *kaukyin*. Other important crops are plantains, sugarcane, betel, sesamum, onions and turmeric which, combined with the wealth of trees scattered over the plain, give this part of the district a fertile and picturesque appearance, an oasis compared to the parched areas which surround it. Villages, chiefly situated on the rivers and irrigation channels, are plentiful though not of large size, and pagodas both on hill and plain are prominent features of the landscape; while a number of ruined city sites—Mekkaya, Myinzaing, Myingondaing, Pinlè, Nyaunghla and Maingmaw—show that the district is rich in historical associations. The main railway line from Rangoon to Mandalay runs through the centre of this area from south to north and from its stations an extensive system of roads radiates, better suited for bullock carts and ponies than for motor cars owing to the depth of dust in dry weather and mud when it rains. In short, the irrigated part of Kyauksè, known in Burmese times as the *Kokayaing*, is one of the most favoured and attractive regions in Upper Burma.

The unirrigated area west of the Samôn is typical dry zone country, with low thorn and cactus scrub jungle, and dry crops, of which the principal are chillies and cotton.

The Yeyaman Hill-tract, extending eastwards into the Shan hills, is mountainous and rugged, deeply scored by ravines, with a very sparse population, about two to the square mile, and little cultivation. It is a forest reserve with some areas allotted for ***taungya*** or shifting cultivation.

The district is drained by the Myitngè, Zawgyi, Panlaung and Samôn Rivers, all rising in the hills to the east, where they each follow a mountain course before they enter the plains. The Myitngè, forming the northern boundary of the district, flows from east to west to join the Irrawaddy at Ava and drains part of the Yeyaman Hill-tract. The Samôn and Panlaung, obeying the general slope of the ground, flow from south-east to north-west, first uniting and then falling into the Myitngè at the extreme north-east corner of the district. The Zawgyi, after leaving the mountains, turns north and then north-east, following an unexpected course across the slope of the land and surprisingly near to the foot of the hills, and empties into the Myitngè at Mekkaya. There are however strong indications that the Zawgyi originally followed the inclination of the ground, flowing west-north-west from the point where it leaves the hills, along the course of the present Dan *chaung*, to join the Panlaung, and was captured by one of its irrigation canals which would naturally be aligned along as high ground as possible. This would account satisfactorily for the present unnatural course of the river. **Rivers.**

As the catchment areas of these rivers lie among the hills, they can be relied upon to produce a considerable volume of water in the rains, which sometimes increases so much as to cause extensive flooding, and in the cold weather, though they become shallow, they are never dry.

Of the four rivers, the Myitngè is much the largest, with a width of 200 to 350 yards, and is navigable for small steamers and country boats of all kinds throughout the year. Like the Samôn it flows between high banks and is useless for irrigation. The Zawgyi and Panlaung are the source of all the irrigation in the district. The former is the longer river and waters the greater area but its volume of water is less than that of the Panlaung. During Burmese times, navigation upon the Panlaung and one of

the Zawgyi Canals was considerable, but now, owing to the competition of the railway and other causes, it is limited to a little traffic on the Panlaung, which does not ordinarily ascend beyond Ywamôngyi. The Samôn shrinks to very small dimensions in the dry weather, but in the rains it fills its deep and narrow bed and floods the adjacent country extensively.

Hills. The Yeyaman Hill-tract is part of the Shan hills system, and is composed of a tangle of ridges, rising to over 4,000 feet in height, and deep valleys. Apart from the Yèyaman Tract, the Shan mountains lie outside Kyauksè District, forming a most attractive background to its scenery, and the only hills are isolated masses of rock rising abruptly from the plains. Of these the highest is Pyetkaywe, with two peaks rising to 3,004 and 3,707 feet respectively. The other principal hills are Mondaung, 1,696 feet; Kalagyaung, 1,711 feet; Kyauksè Hill, 977 feet; Minmwetaung, 792 feet, and Keinnayataung, 1,504 feet. On the western border of the district the Gwe Hills, though they are only 663 feet in height, are a noticeable land-mark. A feature of all the Kyauksè Hills are the pagodas built on their summits and spurs.

akes. There is nothing in the district which can properly be called a lake. There are, however, some undrained *jhils*. These are the Minhla Tank, twelve miles north of Kyauksè Town, formed by the surplus water of the Mingè Canal: the Sunyè *in* eight miles north-east of Kyauksè, formed by drainage from the hills in the neighbourhood and the surplus water of the Thindwe Canal: and the Paleik and Inya *ins* near Paleik Station, filled by the rise of the Myitngè River. The Thindaung *in* formerly existed near Bèlin Railway-station but it has been reclaimed by means of a drainage channel cut to the Zawgyi River which has brought nearly the whole of its bed under cultivation.

mate. Kyauksè is situated in the dry zone, and its climate is hot for the greater part of the year. The rainy season does not begin as a rule till June, though there are occasional downpours in April and May, and it lasts till October. The rainfall is low, averaging about 30 inches, and the rains are always broken by long spells of dry weather. No statistics for temperature are available. Winter lasts from the middle of November to the end of February, when the thermometer ranges between an average of 47 degrees Fahrenheit at night and 84 in the middle of day and the climate is very pleasant for Europeans though the Burmans

find it somewhat cold in the early mornings. The hot season lasts from March to July when temperatures of 102° and above in the middle of the day are common.

Rainfal

During the 26 years ending 1919 the annual rainfall registered at the five recording stations in the district averaged 30·86 inches. The following table shows the average quarterly rainfall for this period in inches at the five recording stations :—

Period.	Paleik.	Kyauksè.	Taungdaw Thanywa.	Myittha.	Kume.
January to March ...	·32	·43	·59	·48	·48
April to June ...	10·80	1·143	10·29	10·40	9·91
July to September ...	13·72	12·50	13·37	12·37	11·87
October to December	6·67	7·49	6·95	7·64	6·60
Total ...	31·51	30·85	31·20	30·89	29·86

Geology.

The heaviest rainfall recorded in one year was 47·08 inches at Taungdaw in 1909 and the lightest 19·95 inches at the same place in 1903.

The climate appears to be healthy and the remarkably high death rate prevalent in Kyauksè District can hardly be ascribed to this cause.

Geologically the Kyauksè District can be divided into (1) a flat plain forming part of the long alluvial valley extending from north to south in which run the Samôn, the Panlaung, and the lower waters of the Myitngè, and (2) the foot hills and western part of the Shan plateau, which border this alluvial valley on the east. A large part of the district was geologically mapped in 1911-12 by Mr. P. N. Datta, from whose notes the following account has been largely compiled.

The alluvial valley, along which the Rangoon-Mandalay Railway line is located, is bounded on the west by a north-to-south low flat ridge of Upper Tertiary beds, which belong to the "Irrawaddy Series" and consist of conglomerates, gritty sandstones and rare bands of shale. In the Gwe Hills west of Minzu Railway-station, these beds are

seen dipping westwards at a high angle; 25 or 30 miles to the south in a continuation of the Gwe Hill near Wundwin the dip appears to be vertical. In the southernmost portion of the Kyauksè District an exposure of granite is described by Mr. Datta, producing, east of Thabyedaung Railway-station, the hill-range whose crest includes the peak Pyetkaywe and forms the local boundary of the Kyauksè District; this outcrop of granite stretches southwards, and is perhaps intrusively connected with the belt of gneiss which is thought to be continuous from the Northern Shan States to Moulmein, through Yamèthin and other districts. Further investigations regarding the presence of granite and gneiss are necessary before the relationship can be defined. The main constituents of the granite are felspar, quartz and biotite. The rock is occasionally porphyritic; in other cases the texture is sometimes moderately fine. There seems to be good reason for concluding that the granite is intrusive into, and younger than, the adjoining sedimentary plateau limestone. A small mass of similar granite is seen also in the north of the district some half a dozen miles north of Kyauksè town, while a diminutive intrusion occurs in the plateau limestone five miles south-east of the same town. Other igneous rocks in the district are a well-foliated felspar-quartz-biotite gneiss forming the prominent pagoda-capped hill at Kyauksè, and the Môndaung rocks. The latter form part of the hilly spur flanking the debouchment of the Panlaung River on to the alluvial plain some nine miles east of Thabyedaung Railway-station, and comprise two main types, a light grey quartz-felsite and a light blue andesite.

The western margin of the Shan plateau, which bounds the alluvial plain on the east, is, generally speaking, a broad belt of limestone, which, east of Kyauksè Town, crosses the district from north to south, but which, further south, lies for the most part outside the district boundary. This limestone is a prominent member of the rocks characterising the Shan States and has been described by Mr. T. H. de La Touche (Memoirs Geological Survey of India, Volume XXXIX, pages 184 *et seq.*), who gave it the name of the "Plateau Limestone." It varies from an almost pure calcite to a true dolomite. The former forms at the top of the system a band which Mr. La Touche considers to be permo-carboniferous in age. Dolomitization is characteristic of the older horizons, which in the Shan States bridge the gap between Silurian graptolite

shales and the above Permo-Carboniferous band, representing in all probability both Devonian and carboniferous. Organic remains are rare in this system, a result perhaps of the pulverisation structure.

The whole of the north-eastern limb of the Kyauksè District has not yet been examined geologically, but the limestone belt is known to be succeeded eastwards by grey or reddish, thinly banded, somewhat indurated shale, which is probably folded up with the limestone in more than one fold. The age of these shales has not yet been definitely determined but they probably belong to Mr. La Touche's Naungkhangyi stage of the Ordovician. A thin band of light grey to greenish, laminated, indurated shale crops out in the Sunyè Tank, north-east of Kyauksé, and is separated from the plateau limestone to the east by a band of rather fine-grained generally thin-bedded reddish or grey sandstone. The description of the latter is not unlike that of Mr. La Touche's Ngwetaung sandstone, a lower stage still of the Ordovician, but Mr. P. N. Datta, who surveyed the area was inclined to the view that both shale and sandstone were younger than the Plateau limestone; he called them respectively the Ubautaung shale and the Ubautaung sandstone. Between Kyauksè and the granite mass to the north are isolated out-crops of sandstones and quartzites and east of the Kyauksè gneiss an east-west ridge of argillites and quartzites connects the gneiss with the plateau limestone. The beds appear to overlie the plateau limestone, but their age is doubtful.

Sandstones or quartzites from the hills east of the railway line between Kyauksè and Bèlin Stations are quarried for road-metal and railway ballast. The quartzites and quartzitic sandstones from the argillite series of the Kyauksè range are sufficiently close-grained and hard for building purposes, and are being used as such; they would also make good road-metal or ballast. The Irrawadian sandstones are not as a rule hard or close-grained enough for building purposes. White marble, somewhat micaceous in places, is known in the following three localities—(1) about four miles east of Kyauksè, (2) five miles south-east by east of Kyauksè and (3) near Taungu, six miles south-east by south of Kyauksè. The outcrops occupy a total area of something like 1½ square miles. Limestone is present in practically unlimited quantity, and is used to a small extent for the manufacture of lime; it would make a

serviceable building stone. The granite in the south is also suitable for ornamental, building or road-metal purposes.

Fauna. Wild animals are chiefly found in the Yeyaman hill-tract and along the Shan hills on the eastern border of the district. On the plains, villages are too frequent and the jungle has been cleared too thoroughly to offer them much shelter. On some *kwins* land has gone out of cultivation and become overgrown with bushes, which, together with a few isolated patches of uncleared jungle, afford cover for a few leopard, pig, and barking deer.

Elephants (*Elephas indicus*) are fairly plentiful in the Yeyaman Hill-tract, whence they sometimes descend to the neighbourhood of the Sunyè *in*

Tigers (*Felis tigris*) are found in the Yeyaman Hill-tract. When the first rains fall some of them come down to the eastern border of the Singaing Township and to the bank of the Myitngè. When the grass is low they live chiefly on game, but when it grows high, during the rains, they take to prowling round the villages in pursuit of cattle.

Leopards (*Felis pardus*) are particularly plentiful in the jungle near Maingmaw, at the foot of the Pyetkaywe Hill. When the pagoda festival on this hill is in progress, they take heavy toll of the visitors' dogs. They exist in very small numbers in nearly all parts of the district.

Bears (*Ursus torquatus*) are found along the hills. They come down into the plains to eat berries and honey. They also feed on the insides of young plantain trees, but they only visit the plantain gardens near the hills.

Pig (*Sus indicus*) are common along the hills, and are found wherever else they can get sufficient cover. They are not plentiful in the plains.

Sambhur (*Cervus equinus*) are found both in the hills and in the plains along the foot of the hills but are not common in the latter. The villagers consider that they are particularly fond of eating *pègyi*.

Thamin (*Cervus eldi*) or brow-antlered deer are to be found in the dry area west of the Samôn, but only in small numbers.

Barking deer (*Cervus aureus vel muntjac*) are fairly common wherever they can find sufficient cover.

Davè (*Cervus porcinus*) or hog deer are scarce, being occasionally found in *kaing* scrub.

Serow (*Nemorhoedus sumatrensis*).—A few of these live in the Yeyaman Hill-tract and along the Shan hills, and

they are alleged to be found occasionally on Kyauksè and Kalagyaung Hills.

As regards small game, Kyauksè is perhaps the best district in Upper Burma for snipe. During the cold weather they are to be found in great numbers wherever the water conditions happen to be favourable, throughout the irrigated area. Jungle fowl and a few pea-fowl live along the foot of the Shan hills and Pyetkaywe.

The flora of Kyauksè District falls into three types :— **Flora.**

(1) The forests of the Yèyaman, Dattaw, and Pyetkaywe Hills.

(2) The dry zone vegetation which is found in the unirrigated area west of the Samôn River and upon ridges in the irrigated area which are not reached by water. This dry zone semi-desert flora would extend throughout the plains of the distrtct if conditions had not been altered by the canal system.

(3) The rich and varied vegetation of the irrigated area, which, on account of the water and sedimentary deposits of the canals has supplanted the dry zone semi-desert type in all the area commanded by the water-supply.

The forest trees of Yeyaman, Dattaw, and Pyetkaywe Hills are described in Chapter V.

The dry zone scrub jungles are composed of different varieties of thorn and cactus. Large trees are scarce but, in addition to varieties of *tanaung* and *pauk*, some *kokko* (albizzia lebbek), *dahat* (tectona Hamiltoniana) and *than* (Terminalia Oliveri) are found. Inside the villages the inhabitants have planted tamarinds, and groves of toddy palms are not uncommon.

The irrigated area contains a large number of fruit trees, planted in the villages or along the banks of canals and rivers. Of these the commonest are toddy and coconut palms, mango, tamarind, and bael fruit. Toddy palms are not so numerous, as in many districts of Upper Burma. Other trees which are common in the irrigated area are varieties of *thinwin*, *nyaung*, *thitpôk*, *tanaung*, *thitpyu* and *padauk*, and among shrubs are found *kan*, *paungpè*, and *shazaung*; also *yingatkyi* (gardenia coronaria), *than* (terminalia Oliveri), *dahat* (tectona Hamiltoniana), *tazaung* (euphorbia), *nabè* (odina Wodier), *tein* (stephegyne parvifolia), *yon* (anogeissus), *yindaik* (dalbergia cultrata), *kokko* (albizzia lebbek) *chinbyit* (bauhinia malabarica), *pauk* (butea frondosa), *kyi* (bauringtonia acutangula), *pyaukseik* (holoptelea integrifolia), *ngu*

(cassia nodosa), *mezè* (bassia longifolia), *letpan* (bombax malabaricume), *peinnè* (artocarpus integrifolia), *zibin* (zizyphus jujuba), *thamon* (boscia variabilis), *nabu* (combretum accuminatum), *suyit* (accacia pennata), *kakkwe* (capparis burmanica), *zaunggyan* (osyris aroborea), and *mohnan* (capparis horrida). The *gyo* (schleichero trijuga) is used for making the axles of carts and the teeth of harrows, and the *gyok* (diospiros oleifolia) used for handles and helves. Along the hedgerows are found datura, *tawmènyo*, *hleza* (vitis repanda), *tawbè*, *hnanlonkyaing* and *baukkwè*. Upon the paddy fields, the commonest weeds and shurbs are *katsené* (urena lobata) *nehlè*, *natkyo* (baliospermum axillare), *wetlan*, *pazunza*, *subadaung*, *myetkyein*, and *sinnamaung*. Upon "ya" land the commonest species are *palantaungbyan* (apparently a kind of *bauhinia*) wild indigo, *zi* (zizyphus jujuba), *pankmaukkôn*, *paukngwe*, *mayo*, *monan* and *pinsein*.

CHAPTER II.

HISTORY.

I—Early Period; II—Anawrata and the Kyauksè Canals; III—The Three Shan Brothers; IV—674 B.E. to 1117 B.E. (Beginning of Alaungpaya's reign)—Kyauksè the Cockpit of Upper Burma; V—Kyauksè under the Alaungpaya Dynasty.

I—Early Period. The Upper Irrawaddy Valley in the last centuries peceding the Christian era formed part of the Kingdom of Tagaung, ruled over by princes of Indian race. These were, about the beginning of the Christian era, ousted by Shan invaders who founded the Kingdom of Pong with its capital in the Shweli Valley and dominated not only the hills but the plains of the Upper Irrawaddy, under the suzerainty of China.* What is now Kyauksè District can hardly have escaped inclusion, first in the Tagaung Kingdom and later in Pong. Shan domination of the plains lasted till the time of Anawrata, 406—439 B.E.†

The statements which follow are little more than working hypotheses. During the period of Shan domination the inhabitants of the district were Shans; their religion was Buddhism of the Mahayana School with a strong taint of native superstition; they cultivated small areas of the plains with the aid of irrigation from minor streams; they were directly subject to four petty chiefs having their capitals on the edge of the plains with easy access to the hills.

* Phayre, Chapter I. Cochrane, pages 22 and 59.
† The dates are from Epig. Birm., Volume I, Part I, page 4.

Such evidence as there is for the first three of these statements will appear in the course of the next few pages. The four petty principalities rest almost entirely on conjecture. It is known that the Shans have always been under the government of petty chiefs and any one familiar with a highland country will know that the chief sites his castle in the plains at the outlet of his glen, so as to control the valuable lowland part of his territory and give himself an easy retreat to the fastnesses of his barren hills. Now there are four routes into the Shan country east of Kyauksè (1) up the Myitngè, (2) by the Taunghla Valley due east of Kyauksè Town, (3) by the Zawgyi Valley, and (4) by the Panlaung Valley and Natteik Pass. These four routes are commanded by the still existing forts of Mekkaya, Myinzaing, Myaunghla, and Pinlè—all of them several miles from the hills but with easy access to the mouth of the glen behind. Mekkaya, Myinzaing and Pinlè are known to have been occupied by three Shan Chiefs at a later period when the power of Pagan was weakening. It is not extravagantly fanciful to suppose that all four were so occupied before the Kings of Pagan had made their authority over the plains supreme.

Clear intimation of the increasing power of Pagan was received in Kyauksè with the arrival of the Aris. A band of them on their expulsion from the capital are said to have settled on the south bank of the Myitngè at Sheinkyaw and Ywabo and to have built the Minhla Tank; after a short residence they were compelled to take to the hills. Such is the tradition; the histories do not relate where the Aris found refuge It is perhaps improbable that tradition would have invented a connection with these rather disreputable clergy; and presumably in coming to Kyauksè they selected a locality where Mahayana Buddhism was firmly rooted.

II—Anawrata and the Kyauksè Canals.

In the 4th century, B. E., there were kings reigning in Pong, Pagan, Thatôn, Pegu and Arakan. Anawrata's conquests made Pagan the paramount power and brought the main river valleys of Burma under his direct rule. In dealing with the Shans he hardly aimed at more than restricting the authority of their chiefs to the hills and for this purpose built a line of forts from Kaungsin and Kaungton near Bhamo to Swa in Toungoo District. In Kyauksè District there were four—Mekkaya and Ta-ōn on the Myitngè, Myinzaing and Myittha. The history states that the purpose of these forts was to keep the Shans out of the

plains * but Shans living within the line of forts would become subjects of Pagan.

Thatôn was conquered and its king brought captive to Pagan. Among the prisoners of war were elephant-men, cavalry-men, carvers, masons, blacksmiths, coppersmiths, painters, armourers, veterinary surgeons, cooks, hair-dressers, and perfumers. Anawrata also brought with him the literature and living exponents of Hinayana Buddhism. The Burmese language was reduced to writing with the aid of Thatôn savants and a period of intellectual enlightenment for Upper Burma began. The Thatôn artists and artisans are usually given credit for the beautiful pagodas which now sprang up in Pagan and another conjecture may be ventured, that the irrigation of Kyauksè owed its execution if not its conception to the skilful men of the Môn country.

Anawrata's irrigation of Kyauksè is often made a wonder story but the version given in the *Thamaing* shows † that the original idea owed nothing to supernatural promptings: "Anorata ascended Hpetkaywe and looked down. He saw the Panlaung, and when he saw it, conceived the plan of erecting irrigation weirs. He then mounted his white elephant and rode off very rapidly to inspect the three rivers, crossing to east of the Panlaung. He encamped at a place called Thayetcho, and cleared of forest the rice land of Nga Kyan Gyi and Nga Kyan Nge. When night came he went to bed full of his schemes and dreamt a dream in which he saw three snakes and a heron. The southernmost of the three snakes he cut with his dagger into four pieces, the middle snake into three pieces, the other snake he could not cut and it escaped. Such was his dream. He called his Brahmans and soothsayers and questioned them. They replied: 'The meaning of Your Majesty's dream is this. On the Zawgyi River which is south of the Myitngè and is the middle river, three weirs shall be erected. On the southernmost river four weirs shall be erected. The meaning of the escape of one snake is that, on the whole length of Myitngè no weir shall be erected."

The weirs constructed by Anawrata according to the generally accepted account appear to have been: on the Panlaung—Kinda, Ngalaingzin, Pyaungbya and Kyimé; on the Zawgyi—Nwadet, Kunze and Ngapyaung.

Of these, Kinda, Kyimè, Nwadet and Ngapyaung still exist. Ngalaingzin and Pyaungbya Canals are now fed

* Hmannan I, page 273.
† *Kokayaing Thamaing*, page 13.

from Kinda Weir and Kunze Canal is now a branch of Nwadet. Although the histories describe Anawrata's weirs as being on the rivers, it is highly probable that some at least were merely regulators on the canals.

Anawrata is said to have accomplished a project which has been recently revived—that of carrying water from the Mashet, one of the Panlaung Canals by an aqueduct across the Samôn. * In regard to this same canal—Mashet—the *Thamaing* has some interesting information about the engineering practice of those days. The Kyauksè Canals as inherited by the British Government were winding slow-flowing channels, the pace of the water being regulated by the extra distance it had to cover instead of by masonry falls on a straight channel as is the modern practice. There was much discussion of the relative merits of these two methods at the time of Mr. Gibson's settlement. The Settlement Officer adopted what is still the opinion of the people that slow-flowing meandering channels confer the greater benefit on the land. It was apparently his belief and it still is the belief of a good many people who have not thought the matter out, that the canals as dug were winding. It is inherently probable that what Anawrata did was to dig a small straight channel to give the water a start and let it do the rest itself. Anyhow there can be no doubt that the Mashet was fast running; for the *Thamaing* says that a boat could hardly go against the stream.† It needs little knowledge of the ways of water to foretell how such a current running in soft earth would alter its course and its gradients. The conclusion therefore is that the meandering course of Kyauksè Canals was an accident—happy or unhappy according to the point of view.

Anawrata is credited with the general settlement of the district and its organisation for maintenance of the irrigation works and for military service. The eleven villages which he founded are ‡:—

Pinlè.—In the south of the district four miles north-east of Thabyedaung.

Pyinmana.—Near Kyimè Weir two miles east of Kumè Road Station.

Myittha.—

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* *Thamaing*, page 16.

† *Thamaing*, page 16.

‡ *Thamaing*, page 53, Hmannan, I, 274. I give the names as in the *Thamaing*.

Ywamôn.—On the Panlaung due west of Minzu.

Myingonding.—On the Panlaung two miles north of Ywamôn, on a commanding site between the Panlaung and its tributary the Danchaung, which is possibly the old course of the Zawgyi.

Panan.—On the Panlaung west of Kyauksè.

Tamôk.—Somewhere in Tamôk canal area west of Kyauksè, probably south of Kyaungbangôn on the Panlaung.*

Thindaung.—Three miles north of Kyauksè.

Mekkaya.—On the Myitngè at the mouth of Zawgyi.

Thabye-tha.—On the Myitngè near Odeindaung.

Kanlu.—On the Samôn north-west from Singaing.

There are forts at Pinlè, Myingondaing, Mekkaya, and Thabyetha. If the situation of these villages can be taken as evidence, it would seem that population was dense along the Panlaung and Myitngè and sparse in the country nearer the hills. These two rivers were obviously the highways of the district.

Provision for the working of the canals was made by appointment of officials such as Sègyats, Sèges, Sègyis, Myaunggyis, etc., and gangs of Binthas living in villages near the weir were charged with maintenance and petty repairs. In the *Sittans* of Kinda and Ngapyaung it is said that Anawrata allotted land to his soldiers † and we may be certain that considerable numbers on taking their discharge would settle in the district. He appointed superior headmen (Thanbyin) and inferior headmen (Kalan) and defined their charges.‡ Other officials whose functions are uncertain are also mentioned.

Anawrata did not neglect religion. He built many pagodas.§ At each weir was the Sènan pagoda and a *nat* shrine to which cultivators in the area watered from the weir owed certain duties; and there were eleven *kus* or hollow pagodas situated in the irrigated area whose festival the neighbouring villagers were bound to attend. The institution of these obligatory visits kept the cultivators informed of the condition of the weir and kept the country open, besides having a civilising influence by bringing the

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* *Thamaing*, page 45.

† The earliest clear mention of service land in inscriptions is found in a dedicatory inscription dated B.E. 797 (?) found at Wunpade in the course of settlement operations. It refers to land of which the fruits were enjoyed by the elephant doctors.

‡ *Thamaing*, page 45. § *Thamaing*, page 45.

people together. Anawrata also built monasteries, *zayats*, wells and tanks and * generally left the district fully equipped. He is said to have spent three years on the work of constructing his weirs and settling cultivators on the land. †

In the centuries following Kyauksè does not figure prominently in the political history of Burma but with the extension of paddy cultivation its real importance to the country was increasing. In the reign of Narapati Sithu, whose dates according to the Hmannan are 536 to 573 B.E., was constructed the Minyè or stone weir from which the Tamôk and Minyè Canals take off.‡ Previous to this in the reign of King Alaung Sithu (454 to 529 B.E.) some irrigation works were constructed in Mandalay District and the standardisation of the bushel and its fractions, the *kwè*, *seit*, *sayut*, *pyi*, *kwet* and *salè* may be taken to indicate an increasing trade in paddy.§

Narapati Sithu's Queen was a lady of Myinzaing and her story is so interesting that it must be at least briefly narrated. Some Praw Shans of Myinzaing found a large bamboo in the forest from which a beautiful baby girl emerged. When she was of age she was sent to the King Minyin Naratheinka. He however exclaimed at the size of the holes in her ears and gave her to his younger brother Narapati Sithu. The queen mother, who lived with Narapati Sithu, had an operation performed on her ears after which no man could look on her flawless beauty unmoved. Under the queen mother's direction she was given the education of a royal lady and became fulfilled of all womanly graces. Her birth being miraculous, her beauty was different from the beauty of other women. At length the King saw and coveted her. Having sent his brother off on an expedition he made her his queen. Narapati Sithu had been previously suspicious of the King's motives and on receipt of sure information hurriedly returned and made an attack on the palace in the course of which the King was slain. Narapati Sithu took back his wife and they were anointed king and queen together. She was known as the Weluwadi Mibaya.||

The Three Shan Brothers.

Miraculous occurrences are usually related in the Burmese histories when there are no comfortable facts to be

* *Thamaing*, page 46. † *Thamaing*, page 44.

‡ *Kokayaing Thamaing*, page 41. See also Hmannan, I, 323.

§ Hmannan, I, page 292.

|| Hmannan I, 316 *sqq*.

recorded. Alaungsithu (474—549 B.E.), was the last of Anawrata's successors who can be called a great king.

From the middle of the 13th century A.D., *i.e.* about 617 B.E., one of the generals of Kublai Khan turned his armies against Burma, and according to the Chinese histories, compelled it to submit to Mongol power. It is doubtful if submission was made at this date, but there were various collisions between Burmese and Mongol forces until the occupation of Pagan in 1286 A.D. (649 B.E.). As was inevitable with these pre-occupations in the north the hold of Pagan on Lower Burma weakened. There were rebellions in Pegu and in A.D. 1285 (648 B.E.) Wararo established himself as King of Martaban.

In the contests with the Mongols and Mons three Shan generals distinguished themselves.* They were three brothers by name Athinkaya, Razathingyan and Thihathu. They were the sons of Theinkabo, a cadet of the ruling house of the Shan State of Binnaka who fled to Myinzaing and there married the daughter of a rich man.† It is related that one day when he was going out to the fields the spade which Theinkabo was carrying on his shoulder was struck by lightning. Theinkabo hailed this as an omen that his sons and grandsons should be great men and sent his three sons to the court at Pagan. This was in the reign of Narathihapate (Tayôkpyemin). The brothers always did their duty to the satisfaction of the king and received from him many rewards including land and villages. The next king Kyawzwa found equal reason to be satisfied with them and bestowed on them the three towns of Mekkaya, Myinzaing and Pinlè. It is certain that Pinlè was given to the youngest brother, Thihathu. There is a little uncertainty as to the towns received by the elder brothers but from a recently discovered inscription it appears that the eldest Athinkaya went to Mekkaya and the middle brother Razathingyan to Myinzaing. This is the account given in the Maniratanabon.‡ At first the brothers ruled as ***Amats*** or Provincial Governors.§ Later,

* The Talaing histories record some unsuccessful operations of a Burman army under Razathingyan in Lower Burma. Paklat History, page 131, Razadirit Ayedawbon, page 10. The opening sentence of the Paklat version is notable. "After this the Chinese king was king of Pagan."

† Hmannan, Volume I, page 367.

‡ Maniratanabon, page 22.

§ Upper Burma Inscription, Volume I, page 269, dated 650 B.E.

they arrogated the title of kings but still recognised the suzerainty of the king of Pagan.*

Their loyalty was corrupted by Queen Saw. After his succession to the throne, King Kyawzwa began to neglect Queen Saw and took no counsel with her. In revenge she formed a plot with the Shan brothers for his undoing. They had erected many religious buildings in Kyauksè (of which, indeed, the dedicatory inscriptions still survive) and Queen Saw arranged that a group of such buildings should be built at Myinzaing. On a report of its completion Queen Saw said to the king: " My lord's ancestor founded eleven villages in the rice land and the fields are fair as the fields of Pegu. Let my lord go and see them and worship at the Pyetkaywe and Thayaung Pagodas." The King went forth with a force of all arms. When he reached the rice land he went up to the Thayaung pagoda on Kyauksè Hill and from there he saw the monasteries which the Shan brothers had built at Myinzaing. " What is that gleaming white in the distance?" he asked. Queen Saw and the ministers who were of one mind with her replied: " Those are works of merit which Your Majesty's servants, the three sons of Theinkabo have dedicated. Let my lord go and wish them well." Unsuspectingly the king went to Myinzaing. On arriving there his head was shorn, he was made to put on the yellow robe and left in a monastery under guard.

About two years afterwards—according to the Hmannan in 662 B.E.†—on complaint by Kyawzwa or his son Saw Hnit to the emperor of China, a Mongol army arrived to restore the rightful King. It is said that 900,000 Mongols encamped in front of Myinzaing. The three brothers saw that if an attack were made with no more dangerous missiles than lumps of horse dung the town would certainly fall and consulted a learned priest as to what was best to be done. He replied: " I am a monk and have no concern with affairs of state. Take you counsel with the tumblers." The tumblers were summoned and performed a shield dance, singing the song of Wararo, the king of Martaban, who executed his brother-in-law, Tarabya. One verse of the song was *Wararo teit twe sa na ahmu the ma shi ka saga ma se ma.*‡ Thereupon, taking hint, the brothers slew

* Tamôk Inscription, 681 B.E. See note J.B.R.S., Volume XI, Part I, page 2.

† Hmannan, page 373.

‡ *Teit twe sa na*—probably a corruption of Talaing words. I have no satisfactory conjecture.

King Kyawzwa and holding his head above the rampart said: "See, the race of Kings is extinct." The Mongol Generals said: "Well, if the race of kings is extinct it only remains for us to return," and demanded gifts from the brothers. Gifts they refused to give but promised payment to the Mongol army if they would dig a canal. The Mongol army undertook the work and it is said that the Thindwè Canal was dug in a single night. The Mongol army then departed.

This account of the construction of Thindwè Canal is not in all respects satisfactory. There are traces of ancient tanks at Myinzaing and it is possible that the Taunghla *chaung* which now follows a north-westerly course several miles distant from Myinzaing was utilised to provide water for the town. But it is quite certain that without the Thindwè Canal which now forms the western moat of Myinzaing a large population could not have been supported. If, therefore, there is any truth in the story at all, what the Mongol army did may have been to make a cutting through the western slopes of the Kyauksè range just north of Myinzaing and continue the canal northwards along the edge of the Thindaung swamp.

An interesting variant of the rise to power of the three Shan brothers is found in the Chinese histories.* It appears that there were two parties in Burma one of which was willing to submit to the suzerainty of China while the other aimed at independence. Not to go farther back, King Narathihapate who on the news of a Chinese invasion fled from Pagan to the delta was poisoned by his son Thihathura at Prome. Next year, 649 B.E., the Chinese under Prince Yesin Timour invaded Burma reaching as far as Pagan and imposed an annual tribute. Kyawzwa ascended the throne as tributary king and in 659 B.E. sent some of his sons to the Emperor's Court at Pekin. But the real power passed to the Shan brothers. Even Kyawzwa wavered in his allegiance and seized the tribute which was being sent to China by the Talaings. His son Sawhnit reported to the authorities in Yünnan the misfeasance of his father and stated that Athinkaya and his brothers wished to put him (Sawhnit) on the throne in lieu of his father. Meanwhile the Shan brothers had rebelled and Sawhnit

* *La fin de la dynastie de Pagan*, Par M. Edouard Huber. B.E., F.E.O., pages 633—680, where both the Burmese and Chinese histories are translated. I owe this reference to the kindness of M. Ch. Duroiselle, Superintendent, Archaeological Survey.

again makes a report, this time to the Emperor of China and to the following effect:—"The other two brothers having rebelled, Athinkaya was ordered by Kyawzwa to plead with them. On his failure to recall them to their allegiance he was imprisoned by Kyawzwa. The other two brothers then besieged Pagan. Athinkaya was released, Kyawzwa was thrown in a pig-sty and Pagan sacked."*

The Chinese thereupon sent an army to besiege Myinzaing, but Athinkaya and his brothers bribed the Chinese Generals who on the plea of sickness among the troops withdrew. Sawhnit and after him Saw Munnit were allowed by the brothers to remain in Pagan as titular kings.

From the above account it appears that Athinkaya and his brothers headed the party which wished for independence. If this inference is correct it would perhaps explain their success in raising the standard of revolt. It must be said, however, that at one time Athinkaya had accepted a title from the Emperor of China a fact mentioned in one of Sawhnit's reports.

Of the Shan brothers, Thihathu was apparently the leading spirit. Even when he was only one of three petty kings he was looking out for a site fit for a great capital.† And, though the Burmese histories seem to be silent on the point, the Talaing histories record that he made an expedition as far as Martaban. Wararo, king of Martaban, 648—668 B.E., had become possessed of a white elephant which was coveted by the king of Ngawdaw. (Ngawdaw is none other than Ngèdo, the name of a locality near Thihathu's capital, Pinlè, preserved as the name of two *kwins*. The king of Ngawdaw, therefore, is the king of Pinlè.) Thihathu marched against Martaban with a large force of elephantery and cavalry. There was consternation in the town but the white elephant appeared to Wararo in a dream and directed that a vessel of scented water should be placed by him. This being done, the elephant sucked it up in his trunk, sprayed it about and trumpeted. All the elephants of Thihathu's army trumpeted in reply and then stampeded in terror. The result was the complete

* The Chinese account mentions that the walls of Myinzaing were defended by catapults of three limbs and of a single limb (balistes à trois branches et à branche unique) which hurled projectiles at the besieging army. The Chinese army made an earthen rampart completely encircling the town for protection against these engines. B.E.F.E.O., page 676.

† Hmannan, I, page 375.

route of the invading army and much plunder for the people of Martaban *

Thihathu was king of Pinlè from 660 to 671; he was sole king of Kyauksè after the death of his brothers from 671 to 674 and resigned in Pinya from 674 to 684 B.E.† Ultimately he gained for himself a great kingdom extending as far south as Tharrawaddy and Toungoo.‡

His subsequent history hardly concerns us. The Thamaing credits him with the erection of the Kudaw Weir, apparently on the Zawgyi, near Kanthit just west of Belin.§ Later modifications of the canal system rendered this weir superfluous.

Thihathu is one of the great kings of Burma. He perceived that Pagan was no longer suitable as a capital. It was obviously impossible for him to keep a secure hold on Lower Burma and the rice land of Kyauksè had become the most valuable part of the kingdom. Pagan was too far away. A site must be found from which the Lèdwin could be controlled, and Thihathu chose Pinya, near the mouth of the Myitngè. That his choice was sound is proved by the fact that the subsequent capitals Ava, Amarapura and Mandalay clustered near the same spot. It is possible that had an equally great genius appeared at a later period, he would have shifted the capital nearer the coast, just as in 1767 the capital of Siam was moved from Ayuthia to Bangkôk. Probably it would have been fortunate for Burma if, at the time when trade with Europe was starting, the Talaings had become the paramount power and had

* This story of how the white elephant saved Martaban from the king of Ngawdaw occurs in the Paklat history, pages 136 and 137, and less fully in Razadirit Ayedawbon, pages 14 and 15.

In the Thatonhnwe Mon Razawin, which has not been published but a copy of which I possess, the following variant appears :—

Wararo was attacked in Kyaukpya Town—Kyaukpya "the end of the stone" appears to be a translation of Maddama or Muh-tamaw by the Kye-kalas, *i.e.* Uriyas, under Zawazawein. The white elephant instructed the king in a dream as above and on his spraying the water, the invaders fled in a panic, many of them leaving even their clothes behind.

The date of the invasion is not given in any of the histories. In the Paklat history it is the last event recorded in Wararo's reign.

† Hmannan, I, page 382.

‡ *Ibid.*

§ *Thamaing*, page 43. The *Thamaing* implies that the weir was on the Zidaw Canal. This is impossible as the Zidaw was not yet in existence. The improbable Hmannan account makes the Kudaw one of Anawrata's weirs. (I, 272.)

established a capital near the sea but Thihathu's selection was clearly right for the time and for several centuries after.

IV—674 B.E. to 1117 B.E. (Beginning of Alaungpaya's Reign)—Kyaukse the Cockpit of Upper Burma.

In the time of Thihathu there were kings in Arakan, Pegu and Ava. Thihathu does not seem to have seriously thought of extending his kingdom over Lower Burma but it was not long before his successors became fired with this idea. All their attempts ended in failure and the consequent weakness of Ava encouraged the Chinese to re-assert their suzerainty and facilitated the rise to power of the kings of Toungoo. By 904 B.E. Tabinshweti of that dynasty had established his authority over Pegu, Martaban and Prome and had founded a new capital at Pegu. The new dynasty had its ups and downs. There were costly expeditions to Upper Burma, Arakan, Siam and the Shan country. Trade with Europe was becoming important and some of the Kings, even after conquest of the Ava, seem to have seen the advantages of Pegu as the capital of united Burma. Ava, however, was finally fixed upon by Thalun Mindara in 996 B.E. Many troubles beset the kingdom—the nature of which will appear from what has to be said of their effect on Kyauksè. In 1102 B.E. a king was crowned in Pegu and ten years later the Talaings were masters of Upper Burma.

This domination was shortlived and in 1117 Alaungpaya was well on his way to the conquest of the whole of Burma.

For the greater part of this period of four and a half centuries, from its proximity to the capital of a feeble state, frequently invaded, and from the fact that the rice it produced inevitably drew the invading armies to it, Kyauksè was probably the most wretched province in Burma. Pegu and Arakan suffered at long intervals, Kyauksè almost continuously.

The following are the principal references to the district in the Hmannan History and other documents.

In 765 B.E. (Hmannan, Vol. I, page 448) Bayin Mingaung sent ten divisions to Arakan one being commanded by the Eater of Paukmyaing; Paukmyaing-za-Sithu. His expedition was an episode in the long struggles between the kings of Ava and Razadirit of Pegu. It is probable that Sithu's divisions contained local levies.

Next year Razadirit invaded Burma and encamped at Sagaing. Bayin Mingaung despaired of expelling him by force and sent an emissary to plead with him. His emissary in addition to pointing out the sin of invading another

king's country recited a catalogue of the towns of Burma which sent contingents to the king's army. The list includes Pinlè, Myinzaing and Mekkaya in the Kyauksè District.

Before his return to Pegu Razadirit made various offerings and presents among which are mentioned betel-nuts and chillies. It would appear, therefore, that chillie cultivation had not yet been introduced in the Paukmyaing Tract of Kyauksè or in the neighbourhood of Wundwin and that there were still few betel palms in Upper Burma.*

In the last quarter of the eighth century B.E. there are a number of references to places in Kyauksè District. After his succession to the throne in 783 King Sinbyushin Thihathu built a *sigon* and monastery at Tabetswè. The capital was now at Ava, and Tabetswè according to the local tradition was the military cantonment where the elephants and cavalry were stabled, and where every unit of the standing army had quarters or rather sites on which to build their own houses assigned to them.

In the reign of Mohnyin Mindara, a Shan usurper said to have been appointed by the Chinese † who reigned during the last 12 years of the eighth century and was the founder of a new dynasty, Minngè Kyaw Din established himself at Pinlè and with his allies, the Shans of Onbaung, marched as far as Tabetswè‡. The invading army was promptly routed by the royal forces under Bayakamani and fled back to Pinlè. With the rewards which the king heaped upon him Bayakamani built the Pyi-nibban Pagoda at Tabetswè.

* Hmannan I, 458. The emissary was a priest and it is improbable that he brought presents to Razadirit. The Paklat History (page 279) says that he did so and that the presents included chillies. At the end of the interview Razadirit gave presents more valuable than he received but what they were is not specified (page 290). The Hmannan account is preferable because a little later (I, 472) there is interchange of presents between the kings and those given by Razadirit are very much what he gave the emissary. I cannot find detailed lists in the Paklat History on this occasion. The chillie is generally held to have been a native of tropical America introduced into India in the 17th century A.D. (Commerical Products of India, pages 264—266). But let us range ourselves with Rumphius who held that it was the *siliquastrum* of Sling; and believe that Razadirit anticipated Joseph Sedley's famous advice—"Try a chilli with it, Miss Sharp."

† Cochrane, page 76.

‡ An invasion of Onbaung Shans is mentioned in an inscription recently discovered at Wunpade, a few miles south of Tabetswè; (သက္ကရာဇ် ၇ ၉ ၇ အုံ့မိပေါင်ဂျွဲအလုံမိကျူးသောအခါ)

It is there stated that Wunpade was the scene of their defeat by the royal army. In the date the first and last figure only are decipherable.

Bayakamani was a famous general. His self control as displayed in the following incident is much praised. On one of his expeditions, at the end of first march from headquarters, becoming suspicious of the fidelity of his wife he returned home at dead of night and saw the lady in the arms of her paramour. His first instinct was to kill them but he restrained himself and departed as secretly as he had come. At the end of the campaign he punished both his wife and her lover, and enriched himself by the confiscation of their property.

Minngè Kyaw Din maintained himself in Pinlè for ten years or more. The Burmans were never good at siege operations and repeated attempts to carry the town failed. In the reign of Narapati (804—830 B.E.) the Crown Prince, Maha-thiha-thura was investing Pinlè when a large Chinese army appeared in Burma. After various adventures in the north they encamped north of the Myitngè River opposite Thabye-tha. Narapati opened negotiations and as on a former occasion the Chinese Generals undertook to do him a service in attacking Minngè Kyaw Din who had now moved to Yamèthin. The Chinese crossed the Myitngè by a boat bridge and marched southward. Minngè Kyaw Din did not await their approach but fled to Kinda The Chinese army then peaceably departed*.

From this time onward Upper Burma was frequently invaded by the Shans, some of whose chiefs succeeded in establishing themselves as kings in Ava; and Ava Town was not a capital of any importance, until the seat of Government was established there in 1629 A.D. (996 B.E.) † by Thalun Mindara of the Toungoo dynasty.

Little attention was paid to the canals during this long period from 700 to 1000 B.E. In the early part of the eighth century the Zidaw Weir was built by Minkyizwa Sawkè and a canal was dug as far as Thabye-tha and Mekkaya on the Myitngè River ‡. In 963 B.E. Nyaungyan Min repaired the then existing canals § and weirs. In 989 there were heavy rains which breached most of the weirs and bunds and caused great destruction .|| Inscriptions record frequent dedication of rice land and the only indication that the canals were not in the best of order is the larg

* Hmannan, Volume II, page 97.
† Hmannan, Volume III, page 228.
‡ *Thamaing*, page 43.
§ Hmannan, Volume III, page 130.
|| Hmannan, Volume III, page 192.

area of *mayin* land which appears to have existed. *Mayin* cultivation may be taken as a certain indication of flooding which would not have occurred if the canals had been properly maintained.

Of the kings of the Toungoo dynasty who reigned in Ava only Thalun Mindara and his two successors displayed any vigour. If there were advantages in proximity to the capital of a vigorous state, there were many disadvantages in such proximity when the kingdom was tottering to its fall. For about a century—indeed till Alaungpaya made himself master of Upper Burma—Kyauksè was the cockpit in which were fought many battles between Burmans on the one hand and invading hosts of Chinese, Shans, and Talaings on the other.

When on the death of Anaukpet-lun Min in 989 B.E. his brothers, Thado-dhamma-raza and Minyè Kyaw Zwa marched on Ava, one of their first actions was to seize and imprison the families of Kyauksè soldiers. They thus secured themselves against the resistance of a Burman army largely consisting of Kyauksè levies which was in Pegu at the time *.

In the reign of Ngadat-dayaka the Chinese again swarmed over the country. They crossed the Myitngè near Paleik, and marched by Sheinkyaw and Tabetswè, and crossing the Panlaung, entrenched themselves at Tada-u. Thence they launched repeated attacks on Ava which was saved by its artillery, manned by *Bayingyi*, probably Portugese Gunners (1021 B.E.)†. The Chinese withdrew across the Panlaung and based themselves on Kinda and the hill-tract of Yengan and harried the Kyauksè Plain. The population, men, women and priests, fled to the hills. The Chinese hunted them and killed as many as they could lay hands on. The royal troops among whom, no doubt, there were considerable members of Kyauksè men and who had been poorly rationed for some time were greatly concerned as to the fate of their families and became thoroughly dissatisfied with the conditions of service. They complained to the king that they were starved but received the reply "I have given you service land; I have no rice to give you." The women of the palace set up rice shops in the western enclosure, but the soldiers had no money to buy. The army now became apprehensive of the

* Hmannan, Volume III, page 199.
† Hmannan, Volume III, page 269.

"welfare of the religion" under such a monarch and made overtures to the king's brother, the Prince of Prome. The prince headed an insurrection and deposed his brother without difficulty. He then drove the Chinese out of the country.

In 1023, however, we hear of them encamped at Mashet in the Kyauksè District where they were again defeated.* After this victory the king summoned the bishops to the palace, and explained how circumstances had compelled him to depose his brother. Betel-nuts and chillies are still mentioned among the offerings which he made. The proper inference now is, perhaps, that these crops had been introduced in Upper Burma but were still comparatively rare.

Later in 1023 the Chinese are still heard of in Kyauksè, but they suffered severely from fever and were routed without difficulty †

The Pye Min held his own pretty successfully against the Talaings and pulled his kingdom through a trying time. In succeeding reigns there were invasions from Manipur and insurrections in Pegu culminating in the elevation to the throne of Byinnya Dala. In the conflict between Ava and the Talaings with their allies, the Gwe Shans, the main theatre of war was in the Irrawaddy Valley, but the king had an outpost at Singaing which held out for several years, and was only abandoned by the garrison when Byinnya Dala had reached Ava (1113 B.E., 1751 A.D.).

Maingmaw, an extensive walled fort in the south of the district, appears to date from about this period. No mention is made of it in the Hmannan or Konbaung histories but there is a vague tradition that it was held for a time by a Shan chief.

V. Kyauksè under the Alaungpaya Dynasty.

Alaungpaya died during an unsuccessful invasion of Siam and left Arakan still unconquered. His successors, therefore, had plenty of opportunities of ruining themselves and their kingdom of which they did not fail to take advantage. New opportunities were created. No time was lost in starting a war with China which led to several Chinese invasions—fortunately not by way of Kyauksè. Zinmè, Siam, Arakan, Manipur, Assam were repeatedly invaded by Burman armies.

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* Hmannan, Volume III, page 276.
† Hmannan, Volume III, page 280.

Bagyidaw who came to the throne in 1181 B.E. (1819 A.D.) still farther extended his activities and by violating the frontier of Chittagong embroiled himself with the British. This led to the loss of Arakan and Tenasserim. Two reigns, of a homicidal maniac and a cockfighter, resulted in the loss of Pegu. Two more, brought the Alaungpaya dynasty to an end, and the British army to Mandalay.

The following brief description of the state of Kyauksè in 1837 A.D. is taken from a work of which probably only one copy exists in Burma.* "On the 25th (May 1837) we descended the *Nat-Tike* Pass, the longest and most laborious in the Burman dominions, or that is known to exist in any of the neighbouring countries. The foot of this pass opens into the valley of the *Irrawaddie* called the *Lay-dau* or royal fields, a dead level which reaches, at this end where it is narrowest, to the *Tsot-kyne* Hills at *Ava* . . . . From this to the capital had been, and still was at the time of our passing, one scene of pillage and robbery; and I had much difficulty in getting the Shans to start before daylight, which was now necessary from the heat, though I believe our party was numerically strong enough to frighten away any of the bands of robbers; however in point of fact it was almost defenceless from the order or disorder of our march, and the difficulty of getting at any ammunition beyond what the guard might have in their muskets. We however crossed the plain in four days and reached *Ava* on the 28th of May without molestation. From the bottom of the pass to *Ava*, though the soil is not rich, it is well watered by several large streams, and being nearly level it is favourable to irrigation, and is as well peopled as any part of the kingdom, except the angle between the junction of the *Kindween* and *Irrawaddie*. The road all the way from *Monay* to *Ava*, with the exception of the pass is very tolerable and well frequented."

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* Abstract Journal of an expedition from Moulmein to Ava through the Kareen country between December 1836 and June 1837. By D. Richardson, Esq., Surgeon to the Commissioner of the Tenasserim Provinces. The "Journal" was published in the Journal of the Asiatic Society of Bengal, 1837, and a copy was made for me in England by Messrs. G. E. Harvey and M. A. Rauf. The "Journal" is also preserved in "Selections from the published papers of Dr. David Richardson of the Moulmein Commission collected from the Asiatic Society's Journal, 1862," kindly lent me by the author's son, the late Mr. Edward Richardson, who died in Maymyo in March 1922. *Lap-dau* has been amended to *Lay-dau* "royal rice land."

Bodawpaya repaired the Minye Weir.*

The only other king who did anything for Kyauksè was King Mindôn. In his reign were constructed the Pinda Weir on the Panlaung (since abolished) and the Tongyi Weir on a natural drainage channel. † Several other ill-advised minor irrigation works, all of which were unsuccessful, appear to have been undertaken, *e.g.* a weir on the Chaungthagyi Creek in the north-east of the district and weirs on drainage channels.

In Mindôn's reign monthly pay for the army was introduced and the old system of allotting land for the maintenance of the soldiers abolished. A great economy must have resulted; the king now paid an army of the strength he required instead of giving revenue-free land to an indefinite number of hereditary militia-men. The old service land now paid revenue, at the rate at which it had usually let before. On *bobabaing* land, too, the rate was raised. It is not quite certain when or by what stages, but it had increased 1,400 per cent. between the end of the 18th Century A.D. and the end of Mindôn's reign.

Another measure of King Mindôn's—the occasional compulsory purchase of 20 lakhs of paddy from the district —is said to have hit Kyauksè hard. The price offered was liberal enough but the money passed through many hands and not all of it reached the cultivator.

In King Thibaw's reign the land revenue was frequently auctioned, a system which must have amounted to licensed pillage, especially as torture constituted the ordinary process for exacting payment.

As the central government weakened the irrigation works were allowed to get into a state of disrepair. The population was decreasing. It had previously been kept up by settlement of prisoners of war in the district and there had been none for over half a century. Nor, in the second half of the 19th century could the world have tolerated such methods of colonization. Canals very easily go from bad to worse and had King Thibaw reigned but a few years longer the Kyauksè Irrigation System would have been in a state of complete ruin.

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* Konbaungzet, page 788.

† *Thamaing*, pages 17 and 32.

CHAPTER III.

THE PEOPLE.

Population; Census of 1921; Distribution; Race: Colonisation by the Burmese Kings; Shans; Zerbadis; Indians; Chinese; Danus; Homes and Dress; Food; General Prosperity; Religion; Nat Legends; Pagoda Festivals; Pagoda Legends; Anawrata's Pagodas and the Dattaw Cave.

Population. The returns of the population of Kyauksè District since the annexation have been :—

Years.			Population.
1891	...	...	126,622
1901	...	...	141,253
1911	...	...	141,426
1921	...	...	142,677

The early years of the British occupation found the population of the district unusually low, owing to the disorders in King Thibaw's time, and during the suppression of the dacoits. At that time the villages along the Nathlwè Canal in the south of the district were deserted, and many villages in the trans-Samôn area were temporarily or permanently abandoned. In early reports upon the canal system, in the years 1887 and 1888, frequent reference is made to the difficulty in finding labour for the customary clearing of the channels owing to the unusually low number of cultivators. It is probable that in the years following the pacification a rapid rise in the population occurred, as the inhabitants who had sought refuge elsewhere returned to their homes, and brought the whole irrigated area again under cultivation. But these conditions were not maintained in the new century. The census figures for 1901, 1911, and 1921 show that while the population of almost all the districts of Upper Burma increased considerably during the last two decades that of Kyauksè remained stationary. The principal cause of this stagnation is probably the high death-rate, chiefly due to malaria, which is prevalent throughout the district, and, when not actually the cause of death, weakens and enervates the system, making its victims unable to withstand the effects of other illnesses. During the years 1901—1918 the average number of births registered annually per thousand was 41·9 and deaths 39 per thousand. The fact that the villages of the Kokayaing were frequently repopulated by the Burmese kings with fresh settlers, particularly prisoners

of war, would seem to show that a falling population has been a characteristic of the area since it was first brought under irrigation.

There has been no inducement to immigration during recent years, as there have been no important improvements in the canal system since 1901, the land accessible to water has already been fully occupied. Taxation is high in comparison with neighbouring districts. There are small vacant tracts along the foot of the Shan hills which could be cultivated, but their occupation is unlikely owing to the presence of malaria of a virulent kind. The land which is still vacant in the unirrigated area west of the Samôn, is of a very inferior quality, and incapable of producing the hardiest crops. Owing to the lack of statistics it is of course impossible to compare the present number of inhabitants with those which were supported by the canals in the peaceful and prosperous periods in Burmese times. There are indications that in King Mindôn's time the population was greater than it is to-day. Mr. D. J. A. Campbell, Deputy Commissioner, reported in 1888 that in 1869 the irrigated lands had yielded twenty lakhs of revenue, but this, whether it refers to rupees or baskets of paddy, seems an impossibly large amount to have been obtained at any time from such a small area. More reliable evidence of a decline in some parts of the Kokhayaing form a greater relative population and prosperity is furnished by Mr. D. H. R. Twomey (now Sir D. H. R. Twomey) Deputy Commissioner, in 1899 who writing of the reopening of the Daing Canal, in the south-east of the district, mentions that when this canal was dug in the reign of Mindôn Min, the small Daing Tract was thickly populated with about 1,000 inhabitants. In 1899 the population was very small, and the inhabitants of outside villages had to be called in to work upon the channel.

Census of 1921. Only the provisional figures of the census of 1921 are available. According to them the population of the district is 142,677, an increase of 1,251 or ·8 *per cent.* as compared with 1911. The number of males in the district is 70,449 and females 72,228, showing an increase of 1,581 and decrease of 336 respectively as compared with 1911. While Kyauksè and Myittha Townships both show a slight increase of males and females, Singaing Township shows a decrease of 285 males and 1,071 females.

The slight increases in Kyauksè and Myittha Townships can probably be accounted for by the temporary

immigration of agricultural labourers at the time of the census from Meiktila and Sagaing Districts, owing to the failure of crops in their own villages. It is also believed that some families have recently migrated from the Singaing Township into the other parts of the district. If any permanent increase has taken place, it is extremely small. It is more probable that there was a slight fall in the net population of the whole district. The decrease in Singaing Township is partly due to outbreaks of plague in Paleik and the villages along the Myitngè River. Paleik itself shows a decrease of 50 *per cent.* since 1911, which is not so much due to disease, as to economic causes. It was, in Burmese times, an important trading centre, through which much traffic, particularly paddy-boats, passed along the Zidaw Canal to the Myitngé River. Alterations in the Zidaw canal, which made it no longer navigable, and the opening of the railway have destroyed the importance of Paleik, and the inhabitants have migrated elsewhere.

Distribution. The inhabitants of the district are essentially rural, living in villages along the banks of the canals and distributaries. Kyauksè Town alone has a population of over 5,000 inhabitants, and in 1911 only 14 villages out of a total of 337 had more than 1,000 inhabitants.

Race. The blood of a number of races—Burmans, Shans, Talaings, Arakanese and Manipuris—mingles in the present inhabitants of Kyauksè. This mixture is due partly to the close proximity of the Shan States and partly to the practice of the Burmese kings, who habitually colonised the Kokayaing with *ahmudans* of the Royal Army, who were often prisoners of war taken in their frequent expeditions. Though the villagers are still well aware of the names of their old units, the differences of race have almost passed from their memory. With the exception of a few Chinese traders and recent Indian immigrants, all speak Burmese as their mother tongue and ordinarily recognise only the two racial distinctions which have been perpetuated by religion, Burmans and Zerbadis.

Colonisation by Burmese Kings. It is probable that in pre-irrigation days, before the 11th century A.D. the population was sparse and consisted of Shans. The Irrigation of the district was undertaken by King Anawrata of Pagan (1044—1077), who built weirs on the Panlaung and Zawgyi Rivers, and founded eleven villages, the *lèdwin sètaywa*—Pinlè, Myitmana, Myittha, Myingôndaing, Yamôn, Panan, Mekkaya, Thabye-tha,

Thindaung, Tamôkso and Kanlu, of which Myittha, Myingôndaing, Panan, Mekkaya, Thabye-tha, Thindaung, Tamôkso and Kanlu have survived. There is no record as to the places whence Anawrata obtained his colonists, but as he had recently returned from his great expedition against Thatôn, it is highly probable that these villages were planted with Talaing prisoners of war, among whom skilled artisans could be found who would be valuable in the construction of weirs, canals, and pagodas. Such scanty information as to further colonisation as is available would seem to show that the enrolment of regiments and their settlement in the Kokayaing were common occurrences, as would be likely, since the area was a great source of revenue to the Burmese kings and every opportunity would be taken to fill it with vigorous and well disciplined cultivators living within easy summons should mobilisation be necessary. Some of these units were probably composed of Burmans, but in other cases they were undoubtedly formed of prisoners of war.

The following quotation is *Saya* Maung's recollection of a passage in the *Yazawinchat*. Most of the copies of the *Yazawinchat* have perished, and it has not been possible to compare this account with the original text, but its substantial accuracy is confirmed by U Ba, Headman of Kyibya, and a nephew of the *Einsheatwinwun* U Thin. Before the annexation, U Ba was constantly employed on the reading and copying of the *Yazawinchat* and other Burmese histories, and their contents are well known to him. In 1630, King Thalun after he had taken a number of Kyun (Shan) rebels captive, made plans and estimates for the material, such as bricks, cement, stones and iron which would be required to complete the foundation of the Kaungmudaw Pagoda begun by his elder brother. When he had completed all arrangements, because it had been successfully accomplished, he called it *Ya-za-mu-ni-su-la*. When he had put on the *hti* and poured a libation, he was about to put white clothes on those who had built the pagoda and dedicate them as pagoda slaves. But the Ministers and Brahmin soothsayers said that among the captives were the Byinnya-ka-yit *Sawbwa* and inhabitants of the nineteen Maw Shan States, descended from the royal race of Kawliya. Also these men had become very numerous. If they were dedicated to the pagoda there would be no profit to the state. Instead of dedicating them he ordered that all the chiefs and such

lesser men of them as might wish should draw in a royal lottery, so that his sons, grandsons, and great grandsons in all their ramifications should receive great benefit. Those who were successful in the royal lottery he made into soldiers and gave them waste land in the Kokayaing to the south, where the water supply was deficient. Because there was promise of much advantage in the lottery the leaders gladly obeyed the King's order and competed in the lottery, and received the shares of land which were given them.

He enrolled as a volunteer body-guard the Shan *She-win*, *Nauk-win*, *Letya-win*, *Letwè-win*, *Su-le-sè-daing*, *Yun-su*, and *Kaung-han* regiments, and founded the following villages, Ngao, Thinbôk, Nyaungywe, Kyaung-bangôn, Tamôkkyi, Padaunghka, Kaungtin, Singôn, Bon-gwin, Pangwa, Yanbônhnit, Kyetsin, Kyieik, Thinnigôn, Yanbetlo, Hmainghin, Kyaungbandaw, Mashet, Kywe-swe and Yanbônkyin.

He enrolled some Shans as cavalry and founded the following villages:—Letpan, Dandaing, Pônna, Thodan, Singut, Myainghin, Yodaya, Kinseinche, Shan-thu-ngè, and Kyieik-Ywathit.

He enrolled some Talaings of a specially brave kind and founded the following villages:—Puttaing, Kadè, Ngalôn-gôn, Talaing-myaung and Êbya.

The majority of the above Shan and Talaing villages founded by King Thalun remain to the present day though their inhabitants have usually forgotten their origin.

The following account of the formation of other units is based upon local tradition, and the accuracy of the dates and figures cannot be guaranteed, but all the regiments mentioned were certainly among those that held land in Kyauksè District. In 1752 King Alaungpaya enrolled 1,302 men from the people of Hanthawaddy in the *Letya-gyaung* musketeers, and again in 1756 he enrolled 1,848 men in the *Letwè-gyaung* from the same region and settled both units in Kyauksè. In 1758 he raised the *Yweletya* and *Yweletwè* Regiments, also in Hanthawaddy, to the number of 1,570 men and settled them in Kyauksè. Sinbyushin, the son of Alaungpaya, continued his father's policy, and planted Shans and Manipuris in the district. In 1763 he suppressed a revolt in the Shan country and from 3,000 inhabitants of Linzin whom he brought back captive, he selected 1,000 men and formed the Linzin Regiment. At the same time he formed or reformed the

Kaung-han Regiment of Shans, and later the Kathè Cavalry from men of Manipur and Kathè who petitioned him for permission to serve in his army. All these units were settled in Kyauksè. As the result of an expedition of Bandoola against Ekkabat and Kathè, the Ekkabat Cavalry was formed from Manipuri prisoners in 1819 and planted in Kyauksè.

Shans. Certain village names, such as Maingmaw and Maingpan, show that their original inhabitants were Shans. Further indication of a very close connection between the district and the Shans is afforded by the appearance of Shan Kings at Myinzaing, Mekkaya, and Pinlè in the 14th century and again at Maingmaw in the 18th; also by the constant trade, existing at the present day, which followed the caravan routes of the Zawgyi and Panlaung Valleys and brought much merchandise to the pagoda festivals. In addition to the Shans who were planted by the Kings as soldiers and colonists many others must have come into the district of their own accord as settlers and traders.

Zerbadis. As regards the Zerbadis, they themselves say that they were brought as prisoners of war from Arakan by King Bodawpaya but they cannot explain how they came to be living in Arakan. They were probably captured by the Burmans in 1784, during the expedition which led to the seizure of the Mahāmuni Image. They form the greater part of the population of the following villages :—Palanbo, Thitkauk, Kanlu, Konni, Hinngu, Kanthit, Letpan, Chaunggwa, Nyaungbintha and Sulégôn. In their way of life and style of house and dress they resemble their Burmese neighbours, but they pay particular attention to the breeding of cattle, goats and poultry. Their women appear to enjoy an independence as great as that of the Burmans, and to have none of those restrictions usually associated with Islam. According to the census of 1911 the total number of Zerbadis in the district was 3,000.*

Indians Since the annexation Kyauksè has experienced the usual influx of Indians, but their numbers are small, and very few have penetrated to villages off the railway line. They are chiefly chetties, shopkeepers and coolies in the employment of the railway.

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* In a manuscript of uncertain date but copied in 1216 (1854 A.D.) it is stated that "Yakaing Myanmagyi Su" had offered allegiance to the King. In 1077 they were enrolled as musketeers, given land in Kyauksè and settled in fifteen places in the area irrigated from Minyè, Kunsè, Pyaungbya and Nwadet Weirs.

Chinese. In 1911 the Chinese in the district numbered 125. The buying of chillies in the unirrigated trans-Samôn area has long been in the hands of Chinese brokers, who live at Myittha and Kumè Road Station.

Danus. In the Yeyaman Hill-tract, a strip of land lying between the Shan States and the Myitngè River, the majority of the few inhabitants are plainly Danus (*i.e.*, half Burman, half Shan), who speak Burmese as their mother tongue.

Houses and Dress. In spite of the high value of the paddy, plantains, chillies and other crops which are grown in the district, the houses in the majority of villages are small, badly built and uncomfortable.

The Settlement Officer, Mr. S. St. J. Westlake, writing in 1891, states:—

"When a land-owner or cultivator has any large surplus over his necessary expenses, he spends very little upon his house or his food, but largely on dress, or (if he can save enough) on building a monastery, pagoda, or *zayat*."

He adds "the people are worse housed in the richest part of the district; mat-walled houses are the exception in the Singaing villages, the houses are chiefly huts raised not more than a foot from the ground, the roof hardly ever is thatched and the walls are woven of bulrush stalks so loosely as hardly to screen the interior."

The Revision Settlement Officer, Mr. R. A. Gibson, writing in 1902, states:—

"The miserable dwelling huts described by the Settlement Officer are now rarely to be seen. Masonry houses are common in Kyauksè and in small towns and large villages, like Myittha, Dayègaung, and others, substantial wooden houses have been built. New monasteries (*kyaungs*) have been erected, numerous *pôngyis* have better food and yellow robes and the people generally dress in better clothes and gayer colours. Chairs and tables are to be seen in some houses and *kyaungs*."

It is true that the most prosperous inhabitants live in wooden or occasionally even brick houses, but still the general standard of their habitations is low. Probably not more than 25 *per cent*. of the houses are raised off the ground, while many are miserable single-room huts, with roofs of palm leaves. The observation made by the Settlement Officer thirty years ago that the worst houses are found in the richest parts of the district, still holds true, with the notable exception of the well-irrigated area near Bèlin on the Minyè Canal, where the prosperous cultivators

live in good buildings. This curious indifference to comfort may be due to the fact that many of the inhabitants are the descendants of Shan prisoners of war and immigrants, who brought from their native hills a low standard of living, which they still retain to some extent. Other reasons may be the distance of the villages, particularly in the trans-Samôn area, from forests or other sources of good timber, and the high taxation to which the district has been subject.

Clothes are the same as those in use in the other districts of Upper Burma, though they give a general impression of coarser quality and duller colour than usual. Jackets are often made of the coarse *pinni* cloth some of which is woven in the villages. Silk cloths are only owned by the most prosperous cultivators; the others generally have good cotton clothes for special occasions such as pagoda festivals where the crowd has a fairly well-dressed appearance.

Food. The ordinary food of the cultivator and coolie is rice. The rice eaten by the villagers is grown locally, but the inhabitants of Kyauksè and Myittha are in the habit of importing rice from Lower Burma, because they consider it of better quality and taste than that grown in the district. Fresh meat, particularly pork, is available at most of the five-day bazaars and dried Madras beef (*sat-tha-chauk*) is also eaten. *Ngapi*, *ngachauk* and sesamum oil are, as usual, most important articles of diet, while a characteristic of the district is the great amount of vegetable produce grown both for local consumption and export—plantains, onions, tomatoes, and beans of several kinds. Toddy palms are less plentiful than they are in the neighbouring districts, but betel is grown extensively.

General Prosperity. In the reign of Mindôn Min the canals seem to have been kept in good order, and a large revenue was collected from the Kokayaing, but it is difficult to say whether the people were really prosperous at that time. It is probable that the high revenue meant excessive taxation. After the pacification the district was found in a condition that was not prosperous. It had suffered from disorders under King Thibaw and during the suppression of the dacoits, the population was reduced, and the canals had fallen into a bad state. When the Settlement Officer wrote his report in 1891 matters had not improved but in 1902 Mr. R. A. Gibson saw a change for the better: "the people are decidedly in better circumstances than they were in

1891. Cessation of disturbances, protection to person and property, better irrigation, higher prices for the produce of the land and for cattle, improved communications, new sources of income with higher wages from irrigation works and from road-metal and lime-quarries have all tended to benefit them."

Conditions in 1891 were abnormal and a marked improvement was bound to occur in the first ten years of settled government, but it can hardly be said that prosperity has continued to advance since the beginning of the century. Neither houses, nor dress, nor bearing suggest prosperity, but rather a struggle to make ends meet. In spite of the good prices which have been obtainable during the last few years for paddy, plantains, onions, chillies and, during the war, white beans, indebtedness is universal throughout the district. In spite of the existence of considerable intelligence, which is shown in the erection of rice mills, in the many branches of the co-operative society, in the headmen's group meetings, and in a remarkable grasp of the problems of irrigation, the inhabitants do not seem to display as much wit and cheerfulness as their neighbours in the unirrigated districts. The economic depression may be due to a combination of several causes—high taxation, deterioration of some parts of the irrigated area, expenditure upon non-productive social and religious objects—while the mental depression among the people is almost certainly due to the prevalence of malaria, which has undermined their vitality for generations.

Religion. According to the census of 1911, 95 *per cent.* of the population of Kyauksè District were Buddhists and 3 *per cent.* Mohamedans principally Zerbadis. Hindus numbered 815, and Christians 679.

How long Buddhism has been the religion of the district is uncertain. Burmese history and local legend ascribe the foundation of the oldest pagodas to Asoka. King Anawrata was probably responsible for the line of pagodas along the eastern foothills which suggest a barrier against some impious power of the mountains, presumably the *nats*.

***Nat* Legends.** A most interesting feature of the religion of the district is the deeply-rooted *nat* superstition which still flourishes among the people. Of such *nats* the principal are Myinbyushin, Kotheinshin and the Sé-daw-u *nats*.

As will be seen from the following account of *nats* and pagodas, the canal system, to which the cultivators owe

their existence and prosperity, has had a great influence upon their religious ideas and practices.

Mr. R. Grant Brown, who was Deputy Commissioner of Kyauksè in 1914-15, in his "Lady of the Weir" (first published in the *Journal of the Royal Asiatic Society* in 1916), gives the stories of the Kyauksè *nats* thus:—

(1) ***Myinbyushin***—"Myinbyushin (Master of White Horse) appears to be specially honoured as a local deity though he is well known elsewhere, and his story is the subject of a well known play. It is told at some length in the 'Legendary History of Pagan' published anonymously by the present Assistant Government Archaeologist in the ***Rangoon Gazettee*** of the 24th September 1907, and its substance is as follows:—

Narapadi Sithu, brother and successor of King Minyin Naratheinka of Pagan (1174 A.D.) had a beautiful wife whom the monarch coveted. He was sent to suppress an imaginary rebellion but suspecting his brother's designs he left behind him his faithful servant Nga Pyi and his best charger and told Nga Pyi to ride straight to him if anything should happen. No sooner was he gone than the King sent for the girl and Nga Pyi rode off to inform his master. At nightfall he came to a stream where he rested, not knowing that the prince's camp was on the other side of it. The horse's neigh was recognised by his owner, and when Nga Pyi presented himself next morning he was killed, and became a *nat* or spirit to which special powers are attributed.

The local legend as told to me makes Nga Pyi halt on the brink of what he took for a wide river, but what was really a sandy desert. It is quite possible that the worship of this *nat* is far older than Narapadi Sithu, but that it has been associated with a historical event. The sandy plain mistaken for a river even suggests an ancient tradition of the wanderings of the race. It will be noticed that the name Myinbyushin is inapplicable to Nga Pyi who was not the owner of the White Horse; yet no one suggests that the *nat* was the real owner, Nayabadi."

(2) *Sè-daw-u nat.*—"The local legend is that this lady was one of the wives of Nawrata and sister of the Shan King of Myogyi which lies among the hills, above where the Zawgyi enters the district, a few miles within the Shan States. At that time no town was founded and no great building erected, without sacrificing one or more human beings whose death was believed to be necessary to the success of the work, and whose spirits afterwards guarded it. The custom had such

vitality that in spite of the spread of Buddhism which Nawrata himself did much to make universal in Burma, human beings are said to have been buried alive under the gates of Mandalay when it was built in 1857, though no evidence of this is procurable. According to one version of the legend, one person was to be killed at each weir when the young queen asked whether her death would not be sufficient for all. This was agreed to and at the time of the British annexation, it is probable that every weir in the district had near it a shrine in which was a wooden figure of the queen overlaid with gold leaf. Since then some have disappeared having been burnt or eaten by white ants. Both the weirs at Kyauksè, however, have figures in good condition. That at the Minyè Weir is of less artistic value than that at the Zidaw, and is probably of later date. Near it is a much weathered stone figure, about 3 feet high with a primitive club. This is popularly supposed to represent an attendant on the queen, but closely resembles the *dvarapala*, or door-keeper, found at the gates of temples and pagodas elsewhere.

At the Nwadet Weir, near where the Zawgyi enters the district, is another figure of the queen also overlaid with gold but of ruder workmanship. It will be noticed that in all these figures the left arm is bent so unnaturally as to appear as if it was deformed. The position can be imitated, however, by making the left hand revolve on the wrist joint as far as it will go to the left and forcing the elbow to the right. The Burmese are naturally supple and extreme flexibility of the joint is regarded as elegant." (The Lady of the Weir.)

According to another more crude version of the legend King Anawrata asked in open council if there was anyone who wished to look after these weirs and canals. One of the queens, thinking it was a light matter and asked in joke, said that there was such a person and that person was herself. On this the King had the lady buried alive at the head of the weir. One of the ministers, brother of the queen, spoke hotly to his majesty and was buried alive beside her. The two became *nats* and were known as the "Sè-daw-u *nats*."*

According to *sittans* of the 18th century, whenever a weir was built, a *nat-kun-ta-zaung* and *nat-yôk-sin-tu*

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* Gazetteer of Upper Burma and the Shan States, Part II, Volume I, page 519.

were erected in honour of the Sè-daw-u *nats* and placed under the care of the *sè-gyi* and other weir officials, who were responsible for their maintenance in addition to their canal duties. They and the cultivators who depended for their living on the water supplied by the weir used to make annual offerings of fruit, sweetmeats, betel leaf, pickled tea, cloths, *longyis*, *gaungbaungs* and *pasos* to these *nats*. A band and marionette shows often performed when the offerings were brought to the shrine.

(3) *Ko-thein* nat.—The king of Myogyi is given the title of Ko-thein-shin which appears to mean 'Lord of nine hundred thousand villages.' The legend is that Nawrata sent for the king expecting him to render homage, and that Ko-thein-shin, who regarded himself as of equal rank but was too tender-hearted to drag his people into war, sank his pride and started for Pagan. But on reaching the whirlpool in the Zawgyi where it emerges from the precipitous rocks marking the border between Burma and the Shan States, he was so overcome with shame that he threw himself into the river, and was drowned. He would seem to be more in place as a local deity in the Shan States than in Burma, but Nawrata's dynasty weakened after his death and the Shans overran Burma.

It is characteristic of the freedom-loving Burmese, however that their national heroes are not their powerful kings who subdued neighbouring races and founded great empires, but victims of their cruelty, more or less obscure and sometimes of alien race. The greatest of Burmese Kings, and the man to whom, more than any other, the universal acceptance of the southern and purer form of Buddhism is due, is Nawrata, yet no one worships at his shrine . . . . . .

At the foot of the picturesque hill nearly 1,000 ft. high which dominates Kyauksè, are two huge boulders called the brother and sister. Here again there may be reference to the King of Myogyi and his sister, but the people have no very definite ideas on the subject, and the divinities may well be of more ancient date. There is at any rate no hesitation in appealing to them in time of sickness. Then offerings of fowls (once no doubt sacrificed on the spot but now bought dead in the market) are made to them and left to the fowls of the air.*

Legend also explains how the Ko-thein *nat* acquired his special position in the Kokayaing. Anawrata knew that

* R. Grant Brown : The Lady of the Weir.

the king of Myogyi had become a *nat*, so he went to the place where the king had been drowned, and struck the water with his magic wand (*Kyein-lôn-sekkya*). The dead king rose to the surface with his hands joined together in homage, whereupon Anawrata appointed him guardian spirit of all the Kokhayaing. *

In many villages in the district it is still the custom to make offerings of plantains, cakes, cocoanuts, pickled-tea, and betel to the Ko-thein-shin *nat*, at the time when the paddy is transplanted, and when it is ripening for harvest. The villagers believe that their crops will be exposed to great risk of damage by insects or other causes, unless this simple precaution is taken. Some cultivators make small *nat* shrines in their fields in honour of the same deity.

(4) *Udeinna* nat.—" Udeinna, the elephant tamer, is also specially connected with this district, as he is said to have been born at Indaing, two miles north of Kyauksè, after his mother the Kethani queen was carried away by a monstrous bird from the palace at Kawthambi (Kosambi) and dropped into a banyan tree. The original tree is said to have disappeared within the last five years. (The Lady of the Weir)."

Note.—The story of Udeinna the elephant tamer appears to have been borrowed by the inhabitants of Kyauksè from an old Indian Legend. According to Rhys Davids' "Buddhist India," Udeinna is said to have been king of the Vamsas or Vatsas, with his capital at Kosambi on the Jumna, at the time when Buddhism first arose in India.

Myinbyushin, the Ko-thein *nat*, and others of less fame, were each of them specialists in curing different kinds of affliction. Thus should the cultivator suffer from the attentions of tigers and leopards, he made offerings to Myinbyushin. If he suffered from illness he turned to Ko-thein-shin, unless it was a case of malaria when Sagaingshin was the appropriate expert. In times of drought recourse was had to Mondaingshin, while Taunggyishin was the terror of such rats or insects as might venture to devour the crops of the Kokayaing.

Pagoda Festivals.

The annual pagoda festivals are also a prominent feature in the life of the people. During the cold weather no less than 17 of these jovial gatherings are held, lasting five, seven, or ten days. They are the scene of great activity, pious, social and commercial. Cheerful family parties of villagers drive in from all sides, amid clouds of dust, urging

* Gazetteer of Upper Burma and the Shan States, Part II, Volume I, Page 517.

their bell-laden bullocks to their fastest paces. On arrival they worship at the pagoda, meet their friends, and make their annual purchases of such commodities as are not available at the ordinary five-day bazaars, particularly carts and ploughs with their spare parts, which are brought in by their manufacturers for sale, oxen, baskets and clothes. Shan caravans also attend some of these festivals, such as those of the Shwe-Môktaw pagoda at Myittha and Shwe-pwin-lan at Ywakainggyi both of which are also great pony fairs.

The following list shows the names of the different festivals, the number of people, carts, and ponies which may be expected to be present, and the dates between which they are held :—

Serial No.	Name of Festivals.	Name of Villages.	Number of People.	Number of Carts and Cattle.	Number of Ponies.	Date From	Date To
1	Shwetha-yaung.	Kyauksè ...	3,000	300 600	100	Tabaung Lasan 10th.	Lasan 20th.
2	Dattaw ...	Yèbaw ...	500	100 200	...	Tabaung Lasok 1st.	Lasok 8th.
3	Shwesatthwa	Nyaungywe	3,000	200 400	100	Tabodwè Lasan 15th.	Tabodwè Lasok 10th.
4	Pawdawmu	Thangyatkon	2,000	200 400	50	Pyatho Lasok 1st.	Pyatho Lasok 8th.
5	Palimbo ...	Taróksu ...	500	75 100	25	Tabodwè Lasan 10th.	Tabodwè Lasan 15th.
6	Shinbinchan-tha.	Paleik ...	5,000	...	...	Tawthalin Lasan 5th.	Tawthalin Lasan 15th.
7	Tônbo ...	Tônbo ...	2,000	300 500	50	Nadaw Lasan 15th.	Nadaw Lasok 8th.
8	Andaw ...	Zibinwun ...	2,000	300 600	50	Tazaungmon Lasan 10th.	Tazaung-mon Lasan 15th.
9	Thandaw-hmyet.	Hmaingpan	500	260 520	60	Tazaungmon Lasan 14th.	Tazaung-mon Lasok 4th.
10	Taungdaw...	Taungdaw...	600	260 520	60	Tazaungmon Lasan 5th.	Tazaun mon Lasan 8th.

Serial No.	Name of		Name of			Date	
	Festivals.	Villages.	People.	Carts and Cattle.	Ponies.	From	To
11	Shwemôktaw	Myittha ...	5,000	1,000 2,500	2,000	Tabodwè Lasan 8th.	Tabodwe Lasan 15th.
12	Taunggyi ...	Gaiongan ...	2,000	200 400	...	Thadingyut. Lasok 1st.	Thadingyut Lasok 6th.
13	Pandaku ...	Lungvaw ...	1,000	200 400	...	Tazaungmon Lasan 10th.	Tazaung-mon Lasan 15th.
14	Mataungda	Ledaw ...	500	100 200	...	Tazaungmon Lasan 5th.	Tazaung-mon Lasan 10th.
15	Shwepwin-lan.	Ywakaing ...	4,000	200 500	1,500	Pyatho Lasan 10th.	Pyatho Lasan 15th.
16	Shweminwun	Gwe-ywa ...	3,500	150 300	150	Tazaungmon Lasan 10th.	Tazaung-mon Lasan 15th
17	Shwepanu ..	Ywamôn ...	2,000	1,000 3,000	50	Tabodwè Lasok 1st	Tabodwe Lasok 8th.

The following pagoda legends are among the best known in the district :—

Pagoda Legends.

(1) *Nandawye Pagoda, Kalagyaung.*—After the overthrow of the Pagan monarchy in 1284 A.D. by the Chinese, three Shan brothers, Athinkaya, Yazathingyan, and Thihathu established themselves as kings at Mekkaya, Myinzaing, and Pinlè respectively. Meanwhile Kyawzwa, son and successor of Tayôkpye-min, apparently having acknowledged the suzerainty of China, still reigned with diminished territories at Pagan and claimed to be overlord of the Shan brothers. A widow of Tayôkpye-min named Queen Saw hated Kyawzwa and she plotted with the three Shan brothers that they might gain their independence and she her revenge by his removal. Accordingly they enticed Kyawzwa to Kyauksè first inducing him to go on a pilgrimage to worship at the Thayaung and Pyetkaywe Pagodas, and then, when he had arrived at Thayaung Pagoda on Kyauksè Hill, persuading him to go on and inspect the monastery and pagoda which the three brothers had just built at Myinzaing. Kyawzwa's suspicions were not aroused, and he went to Myinzaing where he was seized at this Nandawye Pagoda, forced to put on the yellow

robe and thrust into a monastery where he remained till his death. Later Yazathingyan of Myinzaing died a natural death, and Athinkaya of Mekkaya was poisoned by Thihathu of Pinlè, and their bodies were buried under the western plinth of the pagoda. This pagoda is decorated with green enamelled terra-cotta tiles, in the style of some of the pagodas at Pagan.

(2) and (3) *Let-thè and Chanthaya Pagodas, Kalagyaung.*—Saw Hnit, the son of King Kyawzwa, complained to the Chinese Emperor that his father, a tributary of China, had been deposed and imprisoned, and he asked for help to restore him to the throne of Pagan. A Chinese army was sent down to Myinzaing in 1340 A.D. to the assistance of Kyawzwa. When the Shan brothers heard that the Chinese were approaching they cut off the head of King Kyawzwa and showed it to the Chinese generals, who then decided that as the object of their expedition no longer existed they would return home. But first as a trial of strength between the Chinese and Shan armies, the Let-thè Pagoda was built by the Chinese and the Chanthaya by the Shans. The Chinese carried the bricks by hand (Let-thè) while the Shans set up a wicker work structure and covered it with white washed cloth so that it had the appearance of being built with bricks. The Shans thus won the competition and called the pagoda "Chanthaya" or "relief obtained." Then the Chinese army after digging the Thindwè Canal withdrew from Myinzaing.

(The story of Queen Saw, Kyawzwa, and the Chinese army is given more fully in the legend of the digging of the Thindwè Canal in Chapter IV.)

(4) ***Shwezigôn Pagoda**, Ebya.*—According to the story this pagoda was built by Yazathingyan of Myinzaing in 1340 A.D. to commemorate the withdrawal of the abovementioned Chinese Army from Burma. Another legend of the Shwezigôn Pagoda runs as follows:—Thihathu Tasishin, King of Pinlè, outlived his two brothers, the Kings of Myinzaing and Mekkaya, and founded a new city at Panya. He married a daughter of Tayôkpye-min, who had already a son named Usana by a former marriage. Thihathu declared this Usana to be the heir apparent, and he succeeded him as King at Panya but Thihathu also had a son by the daughter of Tayôkpye-min, who was called Kyawzwa, and rivalry arose between the half brothers. King Usana erected this pagoda at Mekkaya praying that if Kyawzwa

fought against him he might conquer him. When the pagoda was in course of construction each of Usana's nine queens carried nine baskets full of gold from the King's treasury and buried them underneath the pagoda. King Usana named the pagoda "Shwezigôn" because his treasure was nearly exhausted over its construction.

When Kyawzwa heard that his brother had built this pagoda he came to it with his five white elephants and named the place where his elephants were tied up "Sinbyuaing." Kyawzwa also built a pagoda near that of his brother and called it "Shwethadi" because he buried his father Thihathu's golden state robes underneath the pagoda.

(5) *Shweyaungdaw Pagoda, Mekkaya.*—The pagoda is near to the Shwezigôn. It was built by a boatman of King Bagyidaw (1819--1837). Its walls and the soffits of its arches have frescoes which show that the Burmese officials of that period grew beards. A chapel within the pagoda contains the images of the five Buddhas of the present cycle. Such a representation is very unusual in Burma, and perhaps indicates the influence of China, where Mittayya, the coming Buddha, has many votaries.

(6) *Pyetkaywe Pagoda.*—According to the legend this pagoda was built by King Anawrata to enshrine a replica of the sacred tooth. Like the Shwethayaung Pagoda at Kyauksè, the site was pointed out by the royal white elephant kneeling down (*vide* No. 11 Shwethayaung Pagoda).

(7) *Shwepwinlan Pagoda, Ywakainggyi.*—Built in the 11th century A.D. by Anawrata in order to commemorate the recovery of the men employed on the digging of the Pyaungbya Canal, who had suffered heavily from malaria.

(8) *Shweminwun, Gwe.*—Ascribed to Asoka. It is said to have been repaired by Anawrata (1044—1077), Bagyidaw (1819—1837) and Mindon (1853—1879). It enshrines a golden statue of the Shweminwun, who according to legend was Anawrata's Minister of Works.

(9) *Paungdawu Pagoda, Thabyeyo.*—According to legend, this pagoda was built by Narapadi-sithu, King of Pagan (1167—1204).

(10) *Palimbo Pagoda, Taròksu.*—This is said to mark the site of King Anawrata's residence immediately before he was gored to death by a wild buffalo at Myitche in the Pakôkku District. An evil omen was seen at this place

before the king's death, a female frog carrying the body of her dead husband on her back.

(11) *Shwethayaung Pagoda, Kyauksè.*—Ascribed by legend to King Asoka and repaired by Anawrata (1044—1077). It contains a replica of the sacred tooth which the King had sought in vain to obtain from the Emperor of China. King Anawrata sent off the royal elephant, Sinmayintha, with a replica of the tooth on its back and ordered that a pagoda containing another replica of the tooth should be built wherever the elephant knelt. The elephant ascended to the top of the Kyauksè Hill and knelt down, and the Shwethayaung Pagoda was built or reconstructed upon the spot. The elephant then proceeded to the top of Pyetkaywe Hill and pointed out the site of that pagoda. It is supposed to have knelt in five different spots but authorities appear to differ as to the exact places.

(12) *Thandawmyet-taung Pagoda, Pyaukseikpin.*—According to the legend this pagoda is built on the spot where three *saing* came and made obeisance to Gautama Buddha during his life on earth. Gautama Buddha predicted that these three *saing* would become Kings, and they were reincarnated as Yazathingyan, Athinkaya and Thihathu, the Shan Kings of Myinzaing, Mekkaya and Pinlè.

(13) *Shwesatthwa Pagoda, Nyaunggywe.*—Ascribed to King Anawrata. It contains the figures of Queen Ma Paw and her brother who were buried alive to ensure the success of the Kyauksè Canals and became the Sè-daw-u *nats*.

Anawrata's Pagodas. From the above it will be seen that Anawrata and the three Shan brothers are the outstanding characters in the lore of the district. There is a tendency to ascribe nearly all old pagodas to Anawrata, which is perhaps natural as he was responsible for conferring the great benefit of the irrigation system upon the area and introducing a purified form of Buddhism. The total number alleged to have been founded by him amounts to at least twenty-five.

The Dattaw Cave. The most striking place of worship in the district and the one most worthy of a visit, is the Dattaw Cave, east of Yèbawgyi Village on the face of the hills. This limestone cave is approached by a flight of steps leading up from a sacred spring at the foot of the hills, through the jungle which covers the steep slope. On arriving at the top of the steps the visitor is confronted by an oblong chamber in the hill-side, open in front. On the floor of this cavern, which is some fifteen to twenty feet below the level of the entrance,

is a fine recumbent figure of Buddha. The walls and roof are covered with stalactites which have developed the usual fantastic shapes to be found in most limestone caves. Beneath the main chamber are smaller cavities containing relics which are approached by narrow and perpendicular passages, the sides coated with the candle grease left by generations of votaries, which can only be descended by active persons of slender build. Immediately in front of the cave grows a very fine tree which according to local belief is unique and possessed of various medicinal properties. Though it closely resembles the "Pyaukseikpin" that, of course, has no medicinal virtue, it is difficult to contradict the assertion that there is no other tree in the world like the Dattaw tree.

CHAPTER IV.

AGRICULTURE AND IRRIGATION.

Part I, Agriculture.—Cultivated and Occupied Areas; Fertility; Areas Under Different Crops; List of Crops Grown; List of Paddies Grown; Paddy; Other Crops; Livestock. *Part II, Irrigation.*—General Description of Canals and Irrigation; History of the Canals; Design and Construction by the Burmese; Alterations and Improvements to Irrigation since the Annexation; Tank Irrigation; Canal Administration (i) past, (ii) present.

Cultivated and Occupied Areas.

Part I, Agriculture.—Kyauksè is essentially an agricultural district. There are no other industries of importance. The principal crop grown in the district is paddy which accounts for 50 per cent. of the gross cropped area. Next in importance are early sesamum, chillies, beans, and plantains.

The total area of the district is 820,323 acres of which fully 450,000 acres are in the Yeyaman Hill-tract and, except in very small patches, are useless for any cultivation except *taungya*. Of the remainder, in 1920, 266,635 acres were classified as "occupied" of which 182,316 were actually planted and 21,707 cropped more than once. It is difficult to judge how the extent of the present cultivated area compares with that in Burmese times as no reliable statistics are available for the latter. It is probable that previous to the annexation cultivation fluctuated considerably, as the efficiency of the canal system depended on the Government. In times of trouble and civil disturbance

such as existed in the reign of King Thibaw, the unsilting of canals was neglected and the cultivated area shrank. The majority of the cultivators were soldiers in the royal army, some of whom worked their land themselves while others let it to tenants. Under Kings such as Bodawpaya, who were frequently engaged on foreign conquest, the soldiers who worked their own lands must have had little time to devote to agriculture. Also there are signs that the population was often depleted, probably by fever and war casualties, necessitating the settlement of fresh batches of war prisoners to bring the lands which had gone to waste under cultivation again. Also it is plain that the canal system has at different times undergone considerable alterations, which suggests that at times it may have proved unsatisfactory, perhaps through the alteration of levels by the constant deposit of sediment. Thus it is probable that under favourable conditions such as existed in the reign of King Mindôn, who pursued a policy of peace and retrenchment, the cultivated area was fully as great as at the present day, but at other times it fell below its present dimensions. This question is also considered in Chapter X, Revenue Administration. Since the British occupation, the only important extension of wet cultivation has been at the tail of the Sama Canal. This increase has been more than balanced by the contraction of wet cultivation which has taken place at the tail of the Paleik (Zidaw) Canal, on the Upper Nwadet and on the Pyaungbya and Nathlwè Canals.

According to the original Settlement Report (1890-91) at that time the total occupied land amounted to 177,795 acres of which 124,744 were planted. An additional 33,260 acres were classified as "cultivable land formerly occupied" which meant that it had been abandoned in the disturbances immediately before and during the conquest of the district by the British, and had not been re-occupied. Thus in normal times immediately before the annexation, the cultivated area must have amounted to some 210,000 acres as compared with 266,000 at the present day.

In 1902 the Revision Settlement Officer wrote that the occupied land (cultivated and fallow) then covered an area of 241,604 acres, being an increase of 63,808 (*sic*) acres or 35·89 per cent. since the original settlement. There was a large increase between the years 1890-91 and 1893-94, *viz.* 22,100 acres, due to the unsilting of small distributaries which had been neglected during the disturbed period following the Burmese regime. From 1893-94 to 1902-03

except in one year 1896-97 when the occupied area was 2,453 acres less than that of the preceding year, the increase in the area of cultivation was progressive. The decrease in 1896-97 was owing to the exclusion of certain waste land which had been shown on the settlement maps as in occupation. The net cropped area at settlement was 124,744 acres and that found at revision 152,896 acres. The percentage of these areas to the total occupied area was 70·16 in 1890-91 and 63·28 in 1902-03. The increase was chiefly due to the expansion of cultivation and partly to additional areas being brought under supplementary survey since the original settlement.

From 1903 to 1920 the cultivated area has fluctuated, reaching its maximum, 194,000 acres, in 1917, while the occupied area has shown a steady increase throughout the period, reaching 260,635 acres in 1920.

Although agricultural statistics show that the cultivable waste land in the district amounted to 70,000 acres in 1919-20, there does not seem to be any immediate prospect of an increase in the cultivated area unless considerable improvements are effected in the irrigation. In the unirrigated area west of Samôn, which amounts to about 54,000 acres, the only land which is not already under cultivation is *ya* of a very inferior quality.

Fertility. In 1919-20, 68 *per cent.* of the total cropped area was irrigated and 32 *per cent.* unirrigated.

According to tradition there are many fields in the irrigated area of Kyauksè District which have been regularly cultivated without a fallow since the construction of the canal system by King Anawrata in the 11th century. At the present day if paddy land is left fallow it is not done with the object of allowing the soil to recuperate, but because of the failure of the water supply or the inability to find a tenant or capital. In spite of this long and continuous cultivation with much double-cropping, the land has maintained a considerable fertility thanks to the annual deposit of sediment carried on to the fields in suspension by the canal water and laid down when the flow becomes slow or ceases. The marked red tinge which is assumed by the rivers and canals in times of rain plainly shows the large amount of detritus which they bring down from the Shan hills and spread over the land. Ordinarily the water of the distributaries which take off near the head of the canal carries a greater load of detritus than that of the distributaries lower down, and the fields nearest to

the distributaries receive a greater amount of alluvium than those far away. This natural fertility of the soil is also assisted to some extent by manuring On the irrigated lands, it may be said the soil has been built up by the water of the canals.

In the dry area west of the Samôn wherever the black cotton soil is pure, it is particularly suited to the cultivation of chillies and a fine yield is obtained year after year without a break. Along the banks of the rivers a silt exists which is annually inundated and is well suited for beans of warious kinds.

Areas under Different Crops. The following table shows the acreage of different crops in 1890-91, 1900-01, 1910-11 and 1919-20:—

Crop.	1890-91.	1900-01.	1910-11.	1919-20.
Mayin ...	3,518	1,250	1,509	248
Kaukyin ...	13,331	5,266	5,654	6,619
Kaukkyi ...	75,574	81,544	102,494	95,122
Wheat ...	654	1,816	2,569	5,620
Maize ..	107	630	437	454
Gram ...	181	1,606	1,336	4,316
Early sesamum ..	2,831	8,501	19,648	21,829
Late sesamum ...	11,317	16,620	7,402	8,785
Chillies ...	5,119	11,505	13,362	11,670
Onions ...	228	922	652	1,550
Other condiments and spices.	53	435	1,245	2,397
Sugar-cane ...	374	783	238	730
Toddy palm groves	...	...	2,122	364
Cotton ...	228	24	49	5,833
Tobacco ...	253	501	387	442
Betel vine ...	181	155	161	166
Pègyi ...	3,142	2,516	6,443	2,786
Pèbyugale ...	...	...		15,820
Pègya ...		710	800	93
Goa beans ..	517	1,031	721	512
Other beans ...	2,973	2,442	3,215	2,131
Tomatoes ...	870	2,836	3,733	3,648
Other vegetables ...	512	2,200	774	878
Plantains ...	4,543	8,250	5,106	6,936

The substitution of early sesamum for late is probably due to the fact that cultivators are sure of getting water on their land, in normal years, at an earlier date than in the Burmese times thanks to improvements in the canals and distribution of water. Chillies were already a firmly established crop at the time of the annexation, but have increased

their acreage owing to a wider market becoming available through improved communications. Tomatoes and onions have similarly increased, as they are now grown for export by rail instead of principally for local consumption. Owing to the great demand during the war, the acreage under *pèbyugale* increased to an astonishing extent reaching its maximum in 1918. The figures for *pèbyugale* from 1917 to 1920 are:—

1917	...	...	15,419 acres.
1918	...	...	44,597 „
1919	...	...	33,807 „
1920	...	...	15,820 „

Before the war *pèbyugale* was of so little importance that it was not shown separately in the Season and Crop Report. In 1914 the acreage under *pègyi* and *pèbyugale* together was 7,149. The marked decrease in the cultivation of *mayin* paddy between 1891 and 1901 was due to the drainage of the Thindaung swamp, near Bèlin, which was the principal place in the district for the planting of this crop. It is now chiefly to be found on the edges of the Paleik *in*.

List of Crops Grown.

The following lists, which do not profess to be exhaustive, show.—

(1) the crops of Kyauksè District

(2) the kinds of paddy which are cultivated in the district.

They give some idea of the great variety of crops which are ordinarily planted in Kyauksè.

A

Chinbaung	...	Hibiscus cannabinus	...	Roselle.
Kalabè	...	Cicer arietinum Linn	...	Gram.
Saba	...	Oryza sativa	...	Paddy.
Matpè	...	Phaseolus mungo Linn	...	Black gram.
Pèbizat	...	Dolichos biflorus Linn	...	Horse gram.
Pèbyugale	...	Phaseolus lunatus Linn	...	Rangoon white bean.
Pèchinbaung	...	Lathyrus sativus Linn	...	Chickling vatch.
Pèdisein	...	Phaseolus mungo Linn var. Radiatus.		Green gram.
Pègyi	...	Dolichos lablab	...	Lablab bean.
Pègya	...	Phaseolus lunatus Linn	...	Rangoon red bean.
Pèlun	...	Vigna catiang	...	Cow pea.
Pèmyit	...	Psophocarpus tetragonolobus.		Goa bean.
Pèsingon	...	Cajanus indicus Spreng	...	Pigeon pea.
Pèyin	...	Phaseolus calcaratus Roxb.		Rice bean.
Pyaung	...	Sorghum vulgare pers	...	Great millet.
Pyaungbu	...	Zea Mays Linn.	...	Maize.

Wa ...	Gossypium sp. ...	Cotton.
Gyon ...	Triticum vulgare (sive sativum).	Wheat.
Kyan ...	Saccharum officinarum ...	Sugar cane.
Pènauk ...	Phaseolus mungo vel radiatus	...
Hse ...	Nicotina tabacum vel rustica	Tobacco.
Kyetthun ...	Allium cepa ...	Onions.
Kayangyin ...	Lyspersicum esculentum	Tomatoes.
Ngayôk ...	Capsicum ann ...	Chillies.
Nanwin ...	Curcuma longa ...	Turmeric.
Pèseinsa ...	Pachyrhizus angulatus Rich	Yam bean.
Hngetpyaw ..	Musa sapientum ..	Plantain.
Nannan ...	Coriandrum sativum ...	Coriander.
Sameik ...	Foeniculum vulgare ..	Fennel.
Hnanyin ...	Sesamum indicum	Early sesamum.
Hnangyi ...	Sesamum indicum ...	Late sesamum
Kun ...	Piper betel ...	Betel vine
Kunthi ...	Areca catechu	Betelnut.
Onthi ...	Cocos nucifera ...	Cocoanuts.
Thayetthi ..	Mangifera Indica ...	Mangoes.

B

List of Paddies Grown.

Taungteikpan.	Kyaingthin.	Midon.
Shweat.	Kywèponbyu.	Theippan nagasein.
Mywehswe (Athe).	Ngakwègyi.	Dalisan.
Kyaukthwe.	Ngasachan	Ngaseingale.
Èmata.	Mayinsatha.	Ngayapo.
Byat.	Mayinsanniyin.	Salanbyu.
Tagaungbyat.	Kaukyinbyu.	Ngaseinpangaing
Lonbyu.	Kaukyingyi.	Kaukthe.
Ngasein.	Ngaseingyi.	Byatwagale lonbyu.
Lonhtat.	Sabani.	Byatthetgyi.
Zalebyu.	Metleik.	Sagubyat.
Sawbwagyi.	Kaukyinsatha.	Hkunwa.

Paddy.

Paddy is grown practically throughout the year. Besides the three main crops *mayin*, *kaukyin*, and *kaukkyi*, there are intermediate crops known as *kauke*, *kaukte*, *sa-tha*, and *kyaingthin*, which are all found in the irrigated tract. Mogaung paddy is grown in the rainfall areas to a small extent.

The cultivation has been too often described for further repetition here. The methods employed in Kyauksè District do not exhibit any special peculiarities.

Other Crops.

Irrigated Plantains.—Locality.—Plantains (*Musa sapientum*) are cultivated with the aid of irrigation sporadically throughout the district, and are almost the staple crop in *Sama* and the upper *kwins* of *Nwadet*.

Variety.—The variety grown is that known as *Thigyi* or *Hpigyan*, a large stocky plantain fairly good to eat and fit to make a brave show at feasts and offerings.

Planting.—The method of cultivation is as follows. Some time in March and April the land is ploughed after the soil has been moistened with a flush of irrigation water. Next month plantain shoots are planted in holes 10 feet. apart. Variations are possible in the matter of planting. One method is to arrange the shoots in rows as at the corners of the squares on a chess board. Another is to plant in a triangular pattern, the shoots in one row being placed opposite the centre of the gaps in neighbouring rows. Still another is to allow large intervals and plant two shoots abreast. In all cases room is left for the harrow to pass between the trees in all possible directions. Four routes are available on the square pattern three on the triangular. After planting water is let in and a deep harrowing given.

Drainage.—The drain which is a feature of plantain as of sugar-cane and turmeric cultivation is now dug. Its level is 12 or 18 inches below the general level of the field and its object is to ensure that water can be thoroughly drawn off the land to a depth of a foot at least, and to keep spill water from adjoining paddy holdings out of the plantain field. From this it will be clear that plantain cultivation is only possible on comparatively high-lying land.

Tending.—During the following year the land is watered and harrowed once a month except perhaps in December, January and February when there is little loss of moisture by evaporation. In February surplus shoots are cut down leaving only those which promise best. Usually only one shoot *per* tree is left but especially in the alluvial land of the Zawgyi Valley two shoots *per* tree (making four if the original planting was in pairs) are sometimes left. About May air is given access to the fruit by lopping off some of the leaves. In July the first fruits are cut and the stem on which each branch grew promptly felled. Fruit cutting, felling and cultivation go on month by month till the end of the year by which time nearly all the original trees (*kyinza*) will have been removed and the second generation are approaching maturity.

Harvesting.—Cutting of the second generation (*tha*) fruit starts about March and goes on until October. Normally the whole tree is now felled, stumps removed and the land prepared for the next crop. In some cases a third crop is taken but there is usually deterioration and decrease of yield.

Soil.—The ideal soil for plantains is probably a loam consisting of recent alluvium. They thrive however in most parts of the district in soils the basis of which is *sanè* with a considerable admixture of canal silt. A stiff clay subsoil into which the roots cannot penetrate is unfavourable. Plantains are said to sour the soil but exactly what happens is uncertain; it may be noted that cutting plantains takes the temper out of a *dah*. Perhaps the soil receives insufficient aeration during the 30 months that it is cropped with plantains. Moreover when plantain cultivation starts in a particular area the hot weather irrigation water spilling from the plantain on to the paddy-fields prevents proper aeration of the latter. Add to this that plantain fields cannot risk being flooded from paddy-holdings and one can see why it is usually arranged that several neighbouring holdings whose conditions of drainage are similar shall be under plantains at the same time. Consequently much land which is not ideally suitable must be brought under plantain cultivation; but the importance of differences of soil can easily be exaggerated and it is generally true to say that where drainage is good and a hot weather water supply certain plantain cultivation will be successful.

Marketing.—The broker usually buys a garden in advance, offering so much *per* 10,000 bunches. His offer is based on what he knows of the land and the cultivator. After ascertaining the number of trees, say 1,000, he estimates that each branch will bear five bunches. If the broker pays for 5,000 bunches the cultivator has to produce that number and no more, if the yield exceeds the estimate the balance is handed over to the cultivator. A bunch containing dwarfish fruit (*mè dwe*) or one bitten by birds (*kye gaik*) or malformed (*thidauk*) a bunch bearing less than 10 fruits, a bunch from which one fruit has dropped off—all such are rejected. This wholesale method of purchase is known as *dagyigôk*. In remoter parts the cultivator may not be able to sell in advance and he will then do his own marketing. Such retail selling is known as *dagalegôk*.

Value.—Plantains are probably the most profitable crop grown in the district. Except a little weeding with *pauktus* there is no hand labour and the cost of cultivation is low. During 30 months the cultivator pays revenue twice and reaps two crops each yielding a profit of about Rs. 100 per acre if prices are in the neighbourhood of Rs. 700 for 10,000 bunches. The disadvantages are a wait of over a

year for the first return, liability to damage from excess or defect of irrigation, from cattle, and storms, and one year at least of poor paddy after the plantains.

Turmeric.—Turmeric (Curcuma longa) is cultivated fairly extensively on irrigated land along the foot of the hills. The tubers have to be boiled before being stored or put on the market an operation of which the expense would be prohibitive except where firewood is plentiful and cheap.

The underground stem or upper part of the aggregation of gnarled roots is retained for seed. The land is thoroughly cultivated by successive operations of ploughing, harrowing and clodbreaking. Ridges are then made usually by hand, about a yard apart and half a yard broad on top and farmyard manure is spread along them. Planting is done in May the plants being about six inches apart and several rows deep. The soil at this time is moist but not wet. After planting the ridges are earthed up by hoe. About a fortnight later water is admitted between the ridges and subsequent waterings are given about once a month. Weeding is usually done three times during the life of the crop. Harvest is in February or March, the withered stalks being burnt the men digging up the roots and the women gathering. A yield of a ton *per* acre may be considered good but as much as a ton and a half may be had with good manuring, good cultivation and good fortune. The price varies; it was Rs. 30 in 1920 and Rs. 15 in 1921 *per* 100 *viss*. Assuming a moderate outturn of 500 *viss* and a price of Rs. 25 the gross receipts are Rs. 125. Cost of cultivation amounts to at least 100 *per* acre, sometimes to Rs. 150, so numerous are the operations for which day labour has to be hired. A good market is therefore essential to the turmeric cultivator and even so it is generally considered impossible to make cultivation pay if it is done on borrowed capital. Men of substance appear to have done well and the weeding and gathering provide employment especially for the women and girls of the village. A turmeric harvest is a scene of apparently innocent merriment closely supervised by a suspicious owner apprehensive of pilfering.

Turmeric may be grown on the same land several years running. It is advisable, however, to rotate it with paddy.

Chillies.—Locality.—Chillies (capsicum annuum) are the staple crop on the *sanè* soil west of the Samôn and are also extensively cultivated in the badly irrigated *kwins* at the tail of the Nathlwè Canal. They are also grown

sporadically in the north end of the district mainly in the badly irrigated tracts along the Myitngè and in the dry *kwins* between the Panlaung and Samôn Rivers.

Variety.—In the trans-Samôn area there are at least three varieties of chillies :—

(1) the *kyungale*, probably the original chillie of the Meiktila border, is a slender fruit about half an inch in diameter at the butt and two inches long. A very few of them are now found mingled with the other varieties.

(2) the *paleik* or *sibuso* (ဆီဘူးသီး) *ashe* is a much bulkier fruit with a maximum diameter of an inch and tapering to a blunt point. A length of two inches is not uncommon but one and a half inches is probably the average.

(3) the *paleik* or *sibuso* (ဆီဘူးသီး) *apu* has no point and is almost globular in shape, and about one inch in diameter.

In the north of the district the chillies are of the *paleik* or *sibuso ashe* variety, but as a rule dwarfish.

The cultivator selects for a large strain of *paleik ashe*. Plants bearing *paleik apu* and *kyungale* appear in next year's crop and this is attributed to "something in the soil." It is more probably due to impurity of the strain resulting from cross fertilisation. In the chilli flower the pistil projects so far beyond the stamens that fertilisation from the pollen of other plants can very easily occur. The *paleik ashe* gives the best yield both for bulk and weight.

Cultivation.—Preparation of the land starts in May. When perfectly clean it is furrowed with a harrow.

In July or August seed is sown in nurseries and the seedlings are planted in the furrows about September. A few days later a short harrow is drawn between the rows so as to heap the earth up into ridges. Two subsequent harrowings are given each accompanied by weeding with a small *pauktu*.

Harvesting.—The fruit is gathered and usually sold as it matures in January and February. Before being railed to the market it is spread on prepared plots to dry and the varying reds of wet, drying and dry fruit make a gorgeous display. In the north of the district the crop is gathered and sold green.

The chilli is entirely dependent on the late rains. *Sanè* soil is drought resisting within limits but a bumper crop cannot be had without good showers in November and

December. On the other hand too heavy rain is said to cause "white" chillies.

History.—Chillies are not native to Upper Burma, they were regularly included in gifts made to the Kings of Burma by the Kings of Pegu. There appears to have been a gradual decrease of paddy cultivation and a corresponding increase of chilli cultivation in the main chilli area, and the displacement is said to have taken effect within the last generation. In former times tank irrigation was practised west of the Samôn, and there are traces of irrigation channels leading from that river on which small weirs or *sèdo* used to be maintained.

Tomatoes:—Locality.—Tomatoes (Lyes persicum esculentum) are extensively cultivated on *ya* land at the foot of the hills east of Kyauksè and in a number of irrigated *kwins* mostly south of Kyauksè.

On *ya* land: The crop is grown on the higher portions of the *kwin*. No manure is used. Seed is sown in a nursery early in the rains and shaded by a low screen of bamboos and rubbish. The fields are ploughed after rain and then harrowed three or four times, then ploughed and harrowed again. Furrows are made with a two toothed harrow 27 inches apart, the seedlings are put down at 27-inch intervals, and about a week afterwards and thereafter at intervals of a week the space between the furrows is harrowed so as to form a ridge and the ground is then weeded by *pauktu* or hand. The fruit ripens about three months after the plants were put in and is plucked as it ripens. The harvest of each plot lasts two and a half to three months and as transplanting is spread over about the same period the tomato season lasts altogether about six months.

A good crop may run to a ton an acre. The cultivator loads up his tomatoes on his own cart and takes them to Kyauksè bazaar where he ordinarily sells them by the cart-load of 120 to 125 *viss*. Before the market is glutted Rs. 20 to 40 a load may be obtained but Rs. 7-8-0 *per* load is perhaps an average. If the price is unsatisfactory the cultivator brings his tomatoes back and exposes the seed for sale to the tomato cultivators of the irrigated tract. A basket of seed representing 16 or 17 baskets of fruit fetches from Rs. 8 to Rs. 25.

The profits of cultivation may be anything from Rs. 8 to Rs. 50 an acre.

On paddy land: Cultivation begins as soon as the paddy is reaped, before the land has lost its moisture. The fields are thoroughly ploughed, harrowed and rolled, then the seed which has been soaked for a night and mixed with cowdung dust or ashes to separate it, is broadcasted. About two *pyi* of seed go to an acre. After sowing the land is again ploughed and harrowed to cover up the seed It is weeded once about a month after sowing. Gentle showers are necessary but the plants are damaged by heavy rain or irrigation water, and the leaves are eaten by caterpillars and shrivelled by strong winds. The fruit is gathered as it matures, the crop remaining on the ground till the *kaukkyi* season.

Fresh seed has to be imported every year from the *ya* tomato area. Both yield and prices are very uncertain. Profits vary between Rs. 30 and Rs. 300 an acre if the crop is good; as the area cultivated by individuals is small, the loss is not heavy in the event of a failure.

Tomatoes are grown in wide hollows between the ridges running east and west which are a feature of the country south of Kyaukse. The soil is a mixture of Zawgyi silt and *sanè* or *sanè putchi*, silt being the best. Yield is determined by fortune in the matter of rainfall and fluctuates to such an extent that the cultivator says the name of the plant should be not *khayanthi* but *kanyanthi* —" Try your luck."

Onions (allium cepa) and garlic (allium sativum), irrigated cultivation.—These are cold weather crops. A few plots are cultivated by means of lift irrigation but the great bulk of the cultivation is on canal irrigated land. If the canals are in order and a *kaukkyi* paddy crop can be obtained onions are not grown. If the canals are out of order so that a *kaukkyi* crop cannot be obtained but are capable of sending down some water in the dry weather, onion cultivation is extensively practised. Thus the increase of area under onions in Pyaungbya Canal Tract which is the home of onion cultivation from 124 acres in 1901-02 to 1,069 acres in 1919-20 is probably an index of progressive deterioration of irrigation.

The commonest variety is the *kala kyet-thun*. The seed is sown in a nursery and the seedlings transplanted into the fields. The plants require four waterings with a weeding following each of the first two waterings. *Kala kyet-thun* are a three months crop and are on the market

in March. They vary in size but onions of two and a half inches diameter are not uncommon.

The Burma *kyet-thun* is declining in popularity. It is less productive and more delicate. It survives merely because it is not so long in the ground and can often be sold in time to pay the *kaukkyi* revenue. Bulbs are obtained by planting an onion in the ground: three or four daughter bulbs spring from it which are taken up, spread thinly on a rack and kept over the rains till next cold weather. These bulbs are planted out direct into the fields. The Burma onion is smaller than the *kala*, as a rule about an inch in diameter.

The *kyet-thun-byu* or garlic is cultivated in the same way as the Burma variety but is about as long on the ground as the *kala*. As opposed to the red or pinky colour of the others the *kyet-thun-byu* bulb is of a very pure white. It is about the same size as the Burma.

The profits of onion cultivation are difficult to estimate because so much can be done, in the way of weeding especially, by the cultivator and his family. In the following statement it is assumed that labour had to be hired for all operations except ploughing and that the seed bulb of *kala* and garlic had to be bought:—

		Rs.
Kala.—Cost of cultivation ...	...	20
Yield 1,000 *viss* at Rs. 10	...	100
Profit Rs. 80 *per* acre.		
Burma.—Cost of cultivation ...	...	50
Yield 750 *viss* at Rs. 10	...	75
Profit Rs. 25 *per* acre.		
Garlic.—Cost of cultivation ...	...	60
Yield 300 *viss* at Rs. 40	...	120
Profits Rs. 60 *per* acre.		

Onion cultivation approximates to market gardening and is very laborious but in some parts of the district when the *kaukkyi* crop is uncertain it is onions that keep the small man from bankruptcy and flight.

When conditions are specially favourable onions, early sesamum and a shortlived variety of paddy are grown on the same land within the year. More frequently onions are followed by early sesamum or onions are the sole crop.

As has been said it is only where the canals are out of order that onion cultivation is practised. The effect on the *kwin* as a whole is bad. The water being under imperfect control spills over the *kwin* and keeps the rice land saturated during the better part of the dry season—where

canal bunds are bad the supply of drinking water for cattle may cause saturation but not over so extensive an area—and the result is that the soil gets insufficient aeration.

Betel palms (*Areca catechu*).—Apart from betel palms grown in small numbers to provide a few nuts for home consumption, betel palm gardens are found south of Kyauksè on both banks of the Zawgyi—34 acres on the right bank and 18 acres on the left bank and at Singaung—36 acres—where the Zawgyi leaves the hills.

It is said that in 1260 B.B. (1898) the Kyauksè gardens were destroyed by heavy floods which killed most of the palms by suffocation. It is probable that some of the gardens never recovered from this set-back. Some which have indeed been replanted are now much neglected and the reasons for neglect given are (1) deterioration of water supply, and (2) the helplessness of the gardener to defend himself against the depredations of squirrels.

As regards water supply, there is some reason to belive that the gardens on the left bank of the river near Kyauksè do not get as good a supply as they did. They depend on Nwadet Canal which is less efficient than it was before remodelling. Singaing, just below the Nwadet Weir, has betel vine as well as betel palm gardens.

As for the gardens on the right bank of the river south of Kyauksè which are watered from Thindwè Canal, the water supply is probably at least as good as before the annexation.

Squirrels are fond of burrowing down the palm and eating the soft pith which is found near the top. Before Arms Acts were known each garden was defended by a watcher armed with a gun. Now a bow and mud pellets are the only weapons and though marksmanship is pretty good it probably take 20 shots to account for a squirrel. Rewards of four annas *per* carcase are offered to the village boys, so that obviously the daily bag cannot be heavy.

A betel palm garden consists normally of a number of rectangles six yards broad and 18 yards long surrounded by ditches into which irrigation water is admitted as required. As a rule palms are planted three abreast, 36 of them to each rectangle, or about 1,300 to the acre. The young palms are shaded by plantains of the Prome variety, many of which are allowed to survive after the palms are in fruit about six years after planting.

The fruit ripens from August to November. Not all the palms bear in any one year; of those which do, some bear one bunch, some two or three. It is probably safe to assume that in a good garden the yield will be a bunch of 50 nuts *per* tree. Climbing is less laborious than climbing toddy palms. The climber fetters his feet and ascends in a series of bounds. Selecting a bunch that is ripe he cuts the stalk and drops it. He then, without descending, swings himself across to another palm with monkey-like activity. Should no palm be within his reach, he sways the one he is on until it approaches sufficiently near another to unable him to spring across. Towards the end of the season a sickle attached to the end of a long bamboo is used where with the climber can reach from tree to tree. The use of this "hook" (*gyogyeik*) is only possible when there is no selection of ripe from unripe to be done and all the fruit remaining is to be rapidly cut. The sickle, with the blade inverted is also used to cut the fruit of the plantains which grow much taller than the *hpigyan* plantains, usually cultivated in the district.

Most of the nuts are sold unshelled and as far as possible in bunches. In their shells, they are easier to keep in the rains, they make an attractive present and the kernel remains soft and suitable for old people with bad teeth. About November, however, the cultivator usually shells his own nuts and gets a slightly bigger price for them. Other produce of the garden are the *pet* or sheath enclosing the top of the palm above the fruit and below the branches. This yields a fine paper-like substance used as wrapping for the whacking white cheroot of the country. The coarser part of the sheath is used as part of the sole of Burmese slippers. The trunks of dead palms are tough and strong; besides occasional use as house posts they are made into yokes or *tabos* and into narrow flooring planks. Leaves and the refuse parts of the sheaths can be made into thatch.

It is hard to ascertain the profits of betel palm gardening. The cost of cultivation including weeding, unsilting the ditches, climbing, etc., is about Rs. 30 *per* acre. The fruit is sold at annas 4 to annas 12 *per* 100 and there is a monthly income of about Rs. 8 *per* acre from miscellaneous produce, principally cheroot wrappers. On an acre of 1,300 palms the yield of nuts is 65,000 at, say, annas 6 *per* 100, or Rs. 244, add miscellaneous produce at Rs. 8 *per mensem* Rs. 96. The value of the gross produce should therefore be

Rs. 340 *per* acre *per annum* or deducting cost of cultivation Rs. 310. For a well kept betel garden I believe this estimate is not very wide of the mark. It is true that rents run from Rs. 50 to Rs. 00 *per* acre, including revenue at Rs. 12 paid by the tenant but the rented gardens are not those that are in best order. Some of them, in the settlement years, looked as if they would not produce fruit to the amount of the rent due. Gardens worked by the owner, on the other hand, were found to be bearing much more freely.

Betel Vine (*Piper Betel*)—Small as is the area of betel vine garden in the settlement area at least three methods of cultivation are practised in different localties. The greatest extent of garden is found at Kumè in the south of the district. There are gardens at Kyauksè, at Singaung near the Ngapyaung Weir on the Zawgyi, and at Nagu near the Kinda Weir on the Panlaung. This association with the rivers and weirs is significant. The gardens are watered by lift irrigation, which requires an abundant supply of water near the surface. The weir keeps up the level of the river and of subsoil water in the vicinity. A yearly dressing of silt has to be given to the plants and along the river bank it is usually possible for the cultivator to dig pits which act as silt traps and are filled and emptied annually. Unfortunately these silt pits have come to be regarded as private property and owners of inland gardens have either to buy their silt or to use inferior soil from pits dug in their own land. It seems likely that the irrigation department could either construct silt traps for the general benefit or so arrange escapes or other channels taking off above the weir as to make larger quantities of silt available at a distance from the river. The betel vine is much the most paying crop grown in the district; the profits allowing for all the operations being done by hired labour are about a thousand rupees an acre. The gardens provide work not only for local residents but for people at considerable distances away. The cost of cultivation is about Rs. 1,000 an acre and the total labour bill for the Kumè gardens cannot be far short of a lakh a year. While the irrigation department have been considering what should be done with the canals and allowing the Pyaungbya and Nathlwè distributaries to get into disrepair; and the difficulties of rice cultivation cumulatively increasing, Kumè betel gardens have been an oasis in a desert of badly cultivated or fallowed paddy lands and have probably helped the agricultural population in the neighourhood to live through a very trying time. It must

be admitted that many of the betel-growers have bought up paddy land and become absentee landlords. They are the only men with capital to invest in this part of the district. But the cultivators who have sold their land would probably have had to abandon it otherwise so no great harm has been done.

The unit of betel cultivation is the ***Naing***; ***tanaing*** is the area which can be watered from one water lift and usually measures about half an acre. This is divided into ***myaungs*** or ***hmyaungs***, according to the cockney pronunciation of this part of the world. Each ***hmyaung***. consists of an area at Kumè usually 30 feet × 120 feet with a channel runing down the centre lengthwise and minor channels taking off to left and right. Posts are erected six feet apart and about six feet above ground; these carry bamboo girders on which a very open floor of bamboos is laid. In each six feet square four tall bamboos are erected for the vines to climb. In a good garden there will be several vines to each bamboo. Bindings of fine ***hni*** are used to secure them to their supports. Most of the leaves are borne in the free air above the scaffolding and those at the top are out of reach. A large stool or horse (***myin***) is therefore used. The plucker mounts it and from one position is able to pluck four vines. The ***myin*** is then slid along to the next bay.

With repeated dressings of silt the level of the garden becomes too high so that a man cannot pass under the scaffolding. Every three or four years therefore the earth round the posts is loosened and the posts raised to a sufficient height. The opportunity is usually taken to strip the vines from their poles and reattach them lower down and to renew such part of the scaffolding as requires renewal.

At longer intervals it is necessary to remake the garden entirely. When the level has risen very much above the natural level of the surface, it may be inconveniently high for the water-lift and underground channels are apt to form in the open soil rendering retention of water difficult. The only possible remedy is completely to remove vines, poles and scaffolding, excavate the whole area and start afresh at a lower level. Otherwise there appears to be no reason why the betel vine, lowered periodically, should not go on growing for ever.

The following are the principal differences of practice in the three chief betel-growing areas.

In Kyauksè, owing to comparative infertility of the soil a little farmyard manure is mixed with the silt dressing at the first start of a betel garden.

At Kumè, as has been said, there are four poles to each square of six feet or that is, one a square yard or 4,840 to the acre. At Kyauksè there are twelve poles to an area of 2¾ by 1¾ yards or 3 × 2 yards except in the bays through which the main irrigation channels run when there are only four. This gives some 10,000 poles to the acre.

At Singaung the poles are very much closer. Here a *naing*—the area a man can work—consists of six *ons* each 8 yards by 20 and containing 500 poles, or over 15,000 to the acre. The vines, however, do not branch as at Kumè or Kyauksè. They are lowered every year. The gardens do not look flourishing and the yield is certainly less than the worst gardens elsewhere.

The leaf grown at Kyauksè is the *pye* or Prome variety. At Kumè and Singaung *kunnyo* is grown. The *pye* is said to be superior in flavour and appearance to the other.

At Kyauksè and Singaung wooden buckets carved out of the trunk of a tree, the *pomiza*, are used for watering. At Kumè stout earthenware pots locally made for the purpose are employed and, with care, it is said that a pot may last 10 or 15 years.

At Kyauksè the supply of subsoil water is deficient in the dry weather and though enough water is always to be had the cultivator, after watering a part of his garden, has to wait till his well fills up again. In former times, when irrigation was less under control, spill water from the canals formed a lake in the neighbourhood of the gardens which ensured a plentiful supply of water at a higher level than at present. The Singaung gardens have similarly suffered from the improvement of Nwadet Weir and the consequent prevention of free spill of water down the Zawgyi Valley.

Live stock. The total number of cattle in the district in 1921 was estimated at 85,996, while in 1911 it was 85,334. The number of ploughs in the same period appears to have increased from 15,154 to 16,231. Buffaloes are only used to a small extent; they numbered 2,244 in 1921, a slight decrease as compared with 1911. There is only one reserved grazing ground in the district, which is near Wettein Village in the unirrigated area west of the Samôn River. In the irrigated area grazing is generally plentiful, but in the rainfall area it is deficient, and a considerable amount of jowar is grown for cattle food. After the paddy has been

reaped large herds are brought into the fields to graze upon the stubble. The cultivators encourage the practice, as the manure which is obtained thereby is of value to their fields. Ponies are plentiful in the district, but breeding is carried on in a somewhat haphazard manner and the results are not as good as could be obtained if greater care was taken. Many villages in the district contain a few pig-breeders but the industry is not regarded with favour by their neighbours and it is not uncommon to find them segregated in a special quarter by themselves. A few small flocks of sheep are found chiefly west of the Samôn, but the total number only amounts to about two thousand head.

General Description of Irrigation and Canals. A system of canals fed by the Zawgyi and Panlaung Rivers, irrigates that part of Kyauksè District which lies between the Samôn river on the west and the Shan hills on the east. This irrigated area, known as the *Kokayaing* and ever regarded as the granary of Upper Burma, includes the whole of the district with the exception of the region west of the Samôn, bordering upon Myingyan and Meiktila, seven *kwins* within the angle formed by the Samôn and Panlaung at their junction, four *kwins* at the confluence of the Samôn and Myitngè, two *kwins* at the confluence of the Zawgyi and Myitngè, sixty-six *kwins* along the foot of the Shan hills and Pyetkaywe, and the Yeyaman Hill-tract. The area west of the Samôn cannot be irrigated as this river is not suited for the purpose. The patches of unirrigated land east of the Samôn lie upon high ground which cannot be approached by water, with the exception of the seven *kwins* within the angle of the Samôn and Panlaung which are cut off from the Sama Canal System by a drainage channel.

The Zawgyi Canal System irrigates the northern part of Kyauksè District, known as the *Ngakayaing* in Burmese times. The catchment area of this river amounts to about 1,600 square miles and is situated in the Maw and Lawksawk Shan States. The Panlaung Canal System irrigates the southern portion of the district, known as the Lekayaing. Its catchment area of about 1,000 square miles is situated in the Yengan Shan State and the eastern hill districts of Meiktila and Yamèthin.

The principal canals are the following :—

The Kinda Canal System which takes off from the right bank of the Panlaung, at the point where that river enters the plains from the Shan hills. After a tortuous course of

about four miles, this canal bifurcates forming the Pyaungbya and Ngalaingzin Canals, which irrigate the area lying east of Myittha.

The Nathlwè Canal takes off from the left bank of the Panlaung about five miles below the Kinda Weir, and waters the area immediately south of the Panlaung westwards as far as the railway line near Thabyedaung.

The Mèzèbintha is a small canal which takes its water from an escape weir about 10 miles below the Nathlwè Weir.

The Taungdaw Canal takes off from the Panlaung about two miles below the Mèzèbintha Weir. This small canal together with the Mèzèbintha, irrigates the area south of Kumè.

The Sama Canal takes off from the left bank of the Panlaung at Kyimè Weir, near Kumè. This remodelled Canal, 24 miles in length, irrigates the area between the Panlaung and Samôn (west of Myittha and Ywamôngyi) to a point due west of Kyauksè.

The Tôngyi Canal takes its water from the Tôngyi *chaung*, which drains the region immediately north of the Pyaungbya Canal Area. The Tôngyi canal irrigates a small area south-west of Minzu Railway-station.

The Nwadet Canal takes off from the left bank of the Zawgyi River at a weir near Naungkan and irrigates all the area south and west of that river up to Kyauksè.

The Ngapyaung Canal takes off from a weir two miles below the head of the Nwadet and irrigates the area along the foot of the Shan hills as far north as Maingpan.

The Thindwè Canal takes off from a weir on the Zawgyi near Hanmyinbo, and flows north parallel with the Shan hills till it empties into the Sunyè Tank. Its irrigation area extends from Maingpan to the Sunyè Tank.

The Minyè Canal takes off from the right bank of the Zawgyi at Minyè Weir, and flowing northwards past Bèlin and Mogaung ends in the Minhla Tank.

The Tamôk Canal takes off from the left bank of the Zawgyi at Minyè Weir and irrigates the country north-west of Kyauksè as far as the Panlaung River.

The Zidaw canal takes off from the left bank of the Zawgyi at Kyauksè a little below the Minyè and Tamôk. This canal, branching into the Myaungzôn and Paleik Canals, irrigates all the area north of Kyauksè and west of the Zawgyi as far as the Myitngè River, which forms the northern boundary of the district.

In the year 1918-19 the culturable area commanded by these canals amounted to 203,590 acres out of a total culturable area in the whole district of 331,000 acres.

The areas commanded by the different canals in 1918-19 were as follows:—

	Acres.
Kinda Canal System ... ... (Pyaungbya and Ngalaingzin)	36,013
Nathlwè Canal System	16,480
Kyimè Canal System ... ... (Mèzèbintha, Taungdaw and Sama Canals)	33,751
Tôngyi Canal	3,656
Nwade Canal	36,616
Ngapyaung Canal	4,031
Thindwè Canal	11,795
Minyè Canal } Tamok Canal }	23,786
Zidaw Canal	37,462
Total.	203,590

The estimated quantity and value of the crops irrigated by these canals during 1918-19 was as follows:—

Canals.	Paddy.		Others crops.		Total.	
	Area irrigated or benefited.	Estimated Value.	Area irrigated or benefited.	Estimated Value.	Area irrigated or benefited.	Estimated Value.
	Acres.	Rs.	Acres.	Rs.	Acres.	Rs.
Kinda Canal System (Pyaungbya and Ngalaingzin).	12,511	4,72,371	5,016	2,24,153	17,527	6,96,424
Nathlwè Canal	7,666	2,87,724	1,279	58,980	8,945	3,46,704
Kyimè Canal System (Mèzèbintha Taungdaw and Sama).	17,861	6,04,225	7,944	3,78,129	25,805	9,82,354
Tôngyi Canal	1,914	68,000	771	25,350	2,685	93,350
Nwadet Canal	14,616	3,93,759	16,955	6,22,833	3 [illegible]	10,16,592
Ngapyaung Canal.	2,474	85,620	1,629	49,980	4,103	1,35,560
Thindwè Canal	7,221	2,06,803	2,176	71,124	9,397	2,77,927
Minyè Canal	6,315	1,31,140	1,279	38,970	7,594	1,70,110
Tamôk Canal	7,644	1,98,653	2,070	80,586	9,714	2,79,239
Zidaw Canal	19,348	4,31,724	11,881	3,57,270	31,229	7,88,994
Total	97,570	28,79,929	51,000	19,07,325	1,48,570	47,87,954

Thus this small area of some 200,000 acres in 1918-19 was capable of producing crops of an estimated value of close upon half a crore of rupees, an average return of Rs. 25 to the acre. In 1918-19 the land revenue for the whole

district, including the trans-Samôn unirrigated area but excluding *thathameda*, amounted to eight lakhs, and the share of land revenue allotted to the Irrigation Department was 5½ lakhs.

It is unnecessary to enumerate here the crops grown upon the irrigated lands. Some indication of their variety is afforded by the fact that selections of at least twenty-five different kinds were made during settlement operations.

Not only does the canal system make Kyauksè one of the richest, if not the richest, area of its size in Upper Burma, but it also produces most attractive scenery. The banks of the canals themselves are in many cases planted with fine trees, particularly *nyaungbin*, tamarind and mango, which have grown to a great size and spread a cool shade over the water and the bridle-paths. Behind these trees the meandering depression, which marks the course followed by the canal before its straightening, is often filled with a dense and luxuriant mass of bushes, the haunt of snakes, squirrels, and birds of very many species, broken only by the villages and monasteries which occur at frequent intervals along the banks. But the wealth of trees is not limited to the main canal alone; they are scattered along the larger distributaries and over the fields, giving to the whole landscape a beauty which is increased by the soft tints of the Shan hills in the background. The debt which Kyauksè owes to its canal system can best be appreciated by crossing the Samôn and entering upon the dreary and desolate region which borders upon Meiktila and Myingyan.

History of the Canals.

Burmese historians assign the conception and execution of the Kyauksè Canal System to Anawrata, King of Pagan from 1044 to 1077, and there appear to be no grounds for doubting the accuracy of this ancient tradition The skill and imagination demanded by so great an enterprise are certainly worthy to be accredited to that most famous of Burman monarchs. The story of how the idea first came to the king in a dream is perhaps the best known of Burmese legends. It has been handed down in slightly differing forms, but the most picturesque version is that Anawrata, returning from an expedition to the east, slept on the summit of Pyetkaywe Hill, and there dreamed that he encountered three snakes. The snake that lay to the south he cut into four parts with his dagger, the middle snake he cut into five parts, while the northern escaped him untouched. When the dawn came he looked down upon the plains of Kyauksè which lay at his feet, and the interpretation of his dream

was revealed to him by the soothsayers. He saw the Panlaung, Zawgyi, and Myitngè Rivers flowing westwards from the mountains. The meaning was that he should build four weirs on the Panlaung, and five on the Zawgyi, while the Myitngè should remain beyond his control. In the opinion of some, the third river, upon which he should build no weir, was the Samôn, not the Myitngè. Neither of these rivers has ever been used successfully for irrigation purposes.

Anawrata himself is said to have lived to see the completion of seven out of the nine original weirs, the Kinda, Nganaingsin (Ngalaingzin), Pyaungbya and Kyimè on the Panlaung, the Nwadet, Kunze, and Ngapyaung on the Zawgyi.*

If it is true that Anawrata built these weirs it is evident that they and their canals have undergone great alterations since the system first came into existence. According to tradition, originally the Mashet Canal took off at the Kinda Weir, and the Ngalaingzin and Pyaungbya each at separate Weirs.†

At the present day, as in late Burmese times, the Ngalaingzin and Pyaungbya both take off at the Kinda Weir and bifurcate after a course of four miles, while the Nathlwè Canal, dug as a substitute for the Mashet, takes off from the Panlaung five miles below the Kinda at a weir built in the reign of Pagan Min (1846—1853).‡ At the time of the annexation another weir, the Pinda, was also in existence. It was built in the regin of Mindôn Min (1856—1873) and from it the small Daing Canal originally took its water.§ This Pinda Weir which seems to have been built with the object of reducing velocity of the river as well as of diverting water into the Daing Canal, has now been removed. The Kyimè Weir, feeding the Sama Canal, perhaps alone among the Panlaung weirs retained the same site and command from its construction to the annexation. Among Anawrata's weirs on the Zawgyi the Kunse has disappeared.

As regards the weirs on the Zawgyi built after the time of King Anawrata, according to tradition the Thindwè was the work of a Chinese army in the year 662 B.E. (A.D. 1300) though it seems more probable that the Chinese really extended a canal that already existed (*vide*

* *Kokayaing Thamaing*, pages 13 and 14.
† *Kokayaing Thamaing*, pages 16, 19, and 21.
‡ *Kokayaing Thamaing*, page 17.
§ Old Burmese Irrigation Works, by J. M. B. Stuart, page 8.

infra). The site of the Kyauksè Weir, according to one story, was originally selected by Anawrata, but the Weir was built by Narapadisithu (1166—1204); * the Zidaw Weir was built by Mingyiswasawkè, King of Ava (1367—1400), and the Gudaw Weir, which has now disappeared, though the remains of its pagoda are visible near Kanthit village, west of the Zawgyi, five miles north of Kyauksè, by Sin-byu-ta-si-shin, Thihathu, King of Panya (1312—1322) † This last weir, the Gudaw, probably supplied water to part of the area now commanded by the Zidaw and Myaungzôn Canals which are fed by the Zidaw Weir at Kyauksè. The Tôngyi Weir and canal, by which water is taken from the Tôngyi *chaung*, were constructed in the reign of Mindôn Min (1856—1873). According to other accounts the Ngapyaung and Kyauksè Weirs were the work not of Anawrata and Narapadisithu, but of Mingyiswasawkè ‡

Legends of the Canals. The rich imagination of the Burmans has invented stories which tell how the sites of some of these weirs were pointed out to their designers by supernatural agency. The Kinda was sited by the Thagya *Nat* in the guise of a paddy bird, the Kyimè by a crow, the Kunse by betel leaves which floated away on the stream as the ladies of the royal household were washing them hard by their encampment. Of these legends that of the Thindwè Canal is the most striking. It runs as follows:—

According to the inscriptions, *thamaings* and *sittans*, it is known that three brothers reigned in the cities of Myinzaing, Mekkaya, and Pinlè, the eldest, Athinkaya, at Mekkaya the middle one, Yazathingyan, at Myinzaing, and the youngest, Thihathu at Pinlè. Kyawzwa was then king in Pagan, and after he had been a long time king he never took counsel with his queen Saw, and forgot her. Queen Saw was hurt at his neglect, and summoned the three brothers, Athinkaya, Yazathingyan, and Thihathu, and spoke to them thus:—"I will arrange a plot which will make you three brothers independent. If you are made independent, do not take away from me my position as queen." She then demanded that the three brothers should swear on oath to her, and they took the oath, and became of one heart and mind with the queen. Having decided upon their common

* *Kokayaing Thamaing*, page 41.
† *Kokayaing Thamaing*, page 43.
‡ Old Burmese Irrigation Works, by J. M. B. Stuart, page 8.

objects, the queen said: "First do you three brothers plan great pagodas and monasteries in Myinzaing; then come and tell me of them."

When the three brothers had arranged for the building of the pagodas and monasteries in Myinzaing, they went and told Queen Saw that they had done so. Queen Saw then spoke to the king as follows:—"The eleven villages of the rice lands, which your royal ancestor Anawrata founded, are fair as the plains of Pegu. I would have you go to behold them, and to worship at the Pyetkaywe and Thayaung Pagodas." The king believed her and set forth with a force of all arms. When he had approached the rice lands and ascended to the Thayaung Pagoda, he looked forth from the top of the hill, and saw at Myinzaing the monasteries which had been built by the three brothers. Also seeing there something very white he asked "How is this"? Queen Saw, who had squared the ministers and officials, replied "The three brothers, taking shelter under your glorious shade, have ordered a great festival on your behalf. Do you go and say to them 'Well done.'" The King, asking no further questions, went forward to say "Well done," but when he came to Myinzaing the three kings seized him, and putting the yellow robe upon him, shaved his head and thrust him into their *kyaung* to be kept there. Then the three brothers, with a host of cavalry and elephants and other forces reigned as kings.*

Sawhnit Min, the son of Kyawzwa petitioned the Regent of China that he should place a king of the hereditary dynasty on the throne. In 662 B.E. (1300 A.D.) Than Sein, Tein Sin, Yaw Ta Tein Sin, Maw Ta Tein Sin, and Maw Ya Meik Tein Sin, the four Chinese generals came with about 900,000 men. The soldiers and officers which the Chinese sent were a noble array, and it was said that if each of them had taken a piece of horse dung and a clod of earth and thrown them at Myinzaing, they would have destroyed the city. When the three brothers heard this report, they sought the advice of the Mahahte, who was wise in the scriptures and soothsaying. But he said to them "I am a priest and politics are unbecoming to me. Take you counsel with the tumblers."

The three kings, heeding the advice to take counsel with the tumblers, called them and bade them dance the shield dance. They danced the shield dance and as they danced they sang:—

* Hmannan Yazawin, page 368.

" *Wararaw teik-twesa-na*—when there is no party to the case there is no more room for words." When the three brothers heard the song of the shield dancers, they killed King Kyawzwa, so as to destroy the royal line of descent, and they showed his head to the Chinese army. Then the Chinese generals said: "Now that the royal race is destroyed, let us return to our homes. But first give us presents. The three kings replied "We will give you presents, but first dig us a canal." The Chinese generals commanded in return "Show us the trace of the canal and we will dig it." When they had been shown the trace of the canal, in order to show their strength, they dug it to the length of 700 *tas*, the breadth of 2 *tas*, and depth of 2 *tas*, between the setting and the rising of the sun. They collected and heaped up the finger tips and toe tips which had been cut off by the spades in the dark and they filled a basket of ten bushels capacity. The three brothers then presented many gifts. The Chinese generals accepted the gifts and returned to their own country.*

The meaning and implication of the words "Wararaw teik-twe sa-na" are obscure. They probably refer to the following incident in the life of Wararu, who was King in Martaban at the end of the 13th century A.D. Tarabya (properly Tarabyinnya) a King of Pegu who was a captive in the hands of Wararu, had married Wararu's daughter, Me Nang Indya. Tarabya plotted against Wararu and Me Nang gave information to her father, who was very wroth with Tarabya and sent his executioners to seize him. Me Nang loved her husband, and, clinging to him, entwined her hair with his. The executioners went and reported to the King, who then said "Cut not my daughter's hair but cut the man's. Take him away and let me not look upon him again." The order was obeyed and Tarabya was killed. Wararu looked after the two sons of Tarabya and Me Nang.†

Design and construction by the Burmese.

The general design and construction of the weirs and canals of Kyauksè District show that the Burmans who were responssible for them had reached a high level in the science of irrigation. This is proved by the fact that when

* Hmannan Yazawin, I, page 372.

† Paklat History, page 133; Razadarit Ayedawbon, page 12. (The latter account leaves out the statement that Me Nang, whom it calls Me Nin Thida, warned her father of the plot). The odds are that any song about Wararu would refer to the above dramatic incidents. The parallel may simply be that Tarabya, like Kyawzwa, was a captive King who was put to death by his captors.

the Irrigation Department reconstructed the Kyauksè Weirs in no case was it found advantageous to alter the site. Similarly, in remodelling the canals, the channels have merely been straightened, and no important departure has been made from the original general alignment.* It is impossible to say how much of this success was achieved when the canal system was first designed, and how much was the result of experiment, failure, and improvement. As has been already noticed there are indications that the Burmans altered the positions of some of the weirs and the lines of the upper reaches of some of the canals in the obscure eight centuries which elapsed between the reign of Anawrata and the annexation by the British. Still there is no reason to believe that tradition errs in ascribing to King Anawrata the general design and execution which has never been fundamentally altered.

Whence the engineers of the eleventh century acquired their knowledge is an intriguing problem which has not yet been solved. The fact that the canal system was begun shortly after the conquest of Thatôn suggests that possibly skilled labour might have been obtained from the prisoners of war captured in that campaign, while the proximity of the Shan States and the intercourse with the Shans, which certainly existed, may have supplied that skill and success in the choice of weir sites which the Burman historians themselves are content to attribute to the supernatural intervention of flying crows and drifting betel leaves. For the narrow valleys and sloping hill sides of the Shan hills were doubtless the scene of irrigation from very early times.

At the time of the annexation the weirs were found to be of stones in timber crib work, and very suitable for their purpose. The following account is taken from a report by Mr. D. J. Grant, Special Irrigation Engineer, dated 12th May 1887. "The dams are all similar in construction, they are formed of rows of stakes driven across the river bed and tied together with cross pieces of palmyra, bamboo, or jungle-wood; the spaces between the rows of stakes are filled in with stones picked up in the river bed or neighbourhood, covered with a layer of larger stones brought specially from some distance. They are as a rule constructed with skill and answer their purpose, but they necessarily require

* Old Burmese Irrigation Works, by J. M. B. Stuart, pages 6 and 14.

constant repair and there is great loss of water by leakage. The stone of which they are formed is generally too small and is readily washed out leaving the stakes exposed; against these stakes floating trees, etc., lodge; the stakes are displaced if they are strong or broken off if they are old or decayed and to prevent accident constant watchfulness is necessary . . . . . One of these dams has an attempt at regulating work, that is the left channel (*Tamôk*) from the Kyauksè Weir."

As regards the construction of the channels, to quote Mr. J. M. B. Stuart's paper "Old Burmese Irrigation Works," page 15: "The science of irrigation seemed to have reached its greatest height in Kyauksè District. In no other district have I been able to find evidence of a channel being dug except by trial and error, or with the aid of water flowing in a small trench along the line of the proposed canal to show how deep it was to be dug. The Burmans do not appear to have known the spirit level, but they knew the properties of the plumb bob (*kèchein*). By means of this *kèchein* they obtained levels, and were able to ascertain the depth of digging required to enable water to flow, so avoiding the laborious method of trial and error."

The Burmans in Kyauksè also had a rough method of finding the discharge of canals. About two *sès* length below the *sè* (weir), a *pandon*, or pole with a bunch of leaves at the top, was planted, and a second *pandon* was put up 50 *tas* (525 feet) below this. Then a *petkwet* (dish made of leaves) or a gourd was floated down from one to the other, and the time was taken by a water clock, and calculated in terms of the Burmese hour. The sectional area multiplied by the velocity gave the volume of water passing in an hour. Before making a channel the necessary size was calculated by allowing one square cubit of sectional area for each 100 *pès* of land to be irrigated.*

The heads of the Burmese canals were open and had no regulators. Consequently in times of flood there was no way of preventing a great rush of water down the canal, which led to breaching and inundation; nor was it possible to distribute the available water among the different canals by turn as is the practice at the present day. The only safe-guard known to the Burmans was the use of a *hlwè* or escape, constructed at certain points where the ground was

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* Report by Mr. D. J. A. Campbell, Deputy Commissioner, Kyauksè, to Commissioner, Central Division, dated 27th July 1888.

low, to let off surplus water and ease the pressure on weirs and channels.

They were most skilful in constructing their canals and distributaries along ridges, which gave them the best command possible. This is particularly noticeable in the case of the Thindwè and Nathlwè, running along the foot of the hills. They did not understand the use of falls, but avoided this difficulty by winding the channels about, so as to get over the natural fall of the country without having too steep a slope in the canal bed, and an excessive velocity and scour. In the opinion of Mr. D. J. Grant the meanderings of the channels had been increased by erosion far beyond the curves which they originally followed.

At the time of the annexation the chief fault which was found with the canals was the great number of cuts in the canal banks and the lack of control over the cultivators in this matter. When anyone wanted water, he made a cut through the canal bank which was left to widen and become a breach if unfortunately the water rose before it occurred to him to close it. Otherwise the general design and efficiency of the canals was found to be unexpectedly good.*

The high opinion which was formed of them at the time is shown by the following extract from the instructions issued to the Executive Engineer, Kyauksè, dated 20th March 1888: "The Executive Engineer must clearly understand that it is the wish of the Chief Commissioner that the irrigation works should be managed in the same manner as in King Mindôn's time. He will not endeavour to introduce methods at variance with old established customs. He should bear in mind that Burmese methods, when properly worked produced a net revenue of Rs. 2,100,000 from the Kyauksè District in the latter days of King Mindôn's reign and that better results are not likely to be obtained by other methods at least for many years to come." As is remarked elsewhere in this volume, this much quoted estimate of 20 or 21 lakhs of revenue, alleged to have been obtained from the Kokayaing in King Mindôn's time, is incorrect and is due to a misapprehension on the part of the early officials of the district.

Alterations and Improvements to Irrigation since the Annexation.

During the thirty-five years which have passed between the annexation of Kyauksè District and the present day alterations have been made to the weirs and canals. This

* Report by Mr. D. J. Grant, Special Irrigation Engineer, Kyauksè, dated 12th May 1887.

work has chiefly consisted in replacing the old Burmese weirs by others of modern design, straightening some of the canals and their distributaries, and constructing regulators at their heads for controlling the admission of water. The straightening of the channels has necessitated the construction of falls or rapids along their courses.

Most of this remodelling work was carried out between the years 1890 and 1905. It is stated that between the original settlement (1891) and the first revision settlement (1902) the average annual expenditure upon the Kyauksè canals and weirs was three and a half lakhs.* The sums spent on extensions and improvements between the first revision settlement and the end of the period of heavy reconstruction in 1905 were as follows :—

1902-03, Rs. 156,315;

1903-04, Rs. 134,631 ; 1904-05, Rs. 234,641.

Figures showing the net balance of revenue obtained from the irrigated area during the years 1890 to 1899 are not available. For the six years 1899—1900 to 1904-05 it averaged only Rs. 26,081 per annum. This period of high expenditure ending in 1905 saw the reconstruction of all the principal weirs in the district, the remodelling of the Zidaw, Tamôk, Minyè, Thindwè, Kunse, Nwadet, Tôngyi, Sama, and Nathlwè Canals, and the digging of the small Daing Canal.

Construction and improvements effected between 1893-94 and 1903-04 are summarised in greater detail in Statement No. 2 at page 44 of Mr. Gibson's First Revision Settlement Report.

Since 1905 improvements have chiefly consisted of the remodelling of distributaries and minor alterations. The average annual expenditure on extensions and improvements between the year 1905-06 and 1918-19 was Rs. 39,392, while during the same period the average annual net balance of revenue obtained from the irrigated area amounted Rs. 3,45,977.

The present year (1921) has seen an important improvement in the rebuilding of the Kinda Weir with falling shutters.

It will be seen from the above that it has hitherto been the practice to alter and remodel the existing canals without any fundamental departure from the Burmese designs which, as has already been noticed, were remarkably good

* Resolution on Revision Settlement Operations, 1902-03, a page 1, of Revision Settlement Report (1902-03).

considering that they were produced by a people with on knowledge of modern and scientific irrigation engineering. In following this policy it would seem that there has been some sacrifice of efficiency for in spite of the great amount of money which has been spent on the irrigation system, it is still far from satisfactory, particularly in some parts of the region watered by the Panlaung Canals, where areas which formerly grew paddy are now planted with other crops requiring less water or else are out of cultivation. It is understood that further and more drastic alterations are now under consideration.

As long ago as 1887 Mr. D. J. Grant in his report on the Kyauksè Canals pointed out that fundamental alterations in the irrigation system would be advisable. He states "There can be no doubt that there are now too many dams and too many channels and that one good dam at the head of each river with a suitable system of the channels would probably do all the work of the present dams, would be cheaper to maintain, less liable to accident, and distribute water much more economically. On the Panlaung, the dam would be placed at or near the site of the present dam a mile above Ingôn (the Kinda Weir). . . On the Zawgyi the permanent dam would be placed as near the present first weir (Nwadet) as possible."

The sweeping alterations here proposed were never put into effect, presumably on the grounds of economy.

As regards the effects, beneficial or otherwise, of the alterations which were carried out, Mr. Gibson reached the following conclusions. By straightening the canals the tail end was better served than before, while the irrigation near the head and middle was in some cases not so good as before. The improved canals had shorter courses being from one-third to half of their original lengths, and thus there was a large saving in the cost of maintenance. The water supply on most canals was improved but on some, such as the Zidaw and its branch the Myaungzôn, it had deteriorated. Canals now received their water supply by turns and irrigated their fields only for a few days at a time. The withering of nurseries and the failure of crops on the Zidaw and Myaungzôn were attributed to the long intervals between the periods of water supply.* The Deputy Commissioner, Major Aplin, noted that the Revision Settlement Officer appeared to consider that on the

* Page 4 of Report on Revision Settlement Operations in Kyauksè District (1902-03).

whole the effect of improvements to the canal system had been the reverse of beneficial He thought that Mr. Gibson's conclusions were in some cases based on incorrect premises, and that disadvantageous results attributed to canal works might be more justly attributed to other causes. Until all the distributaries of a canal had been remodelled, the full advantages of remodelling were not obtained, but already there was ample evidence of the value of the improvements. In a remodelled canal depth, width and slope were calculated so as to avoid either scouring or the deposit of silt, and the heavy charges for unsilting necessary in an unremodelled canal were avoided. The distribution of water, between the different canals in turn, only took place when the supplies in the river were so low as to render it imperative and on the whole it was greatly to the advantage of the cultivators.

The above remarks were made some eighteen years ago before the process of remodelling the distributaries had advanced very far.

Tank Irrigation.

Tank irrigation in Kyauksè District is not extensive. It is practised below the Sunyè, and Minhla Tanks. The Sunyè and Minhla each supply water to parts of three *kwins*. The Paleik *in* is notable as being, though small, the chief *mayin* area in the district. Formerly in the unirrigated area, west of the Samôn, there were a number of small tanks, fed by surface drainage after rain, which were used for the cultivation of paddy. At the present moment most of these are breached and useless, and the cultivators, who are inclined to pay attention to the growing of dry crops rather than paddy, do not seem very anxious to repair them. Two tanks of fair size, in good condition are to be found at Yitkan near the border of Myingyan District and at Kyadwin, on the borders of Meiktila District.

Canal Administration (i). Past.

As the *Kokayaing* was the granary of Upper Burma and a most important source of revenue, the maintenance and efficiency of the canals was a subject of great interest to the Government.

The following description of the administration of the canals is based chiefly upon *sittans* of the 18th century published in "Kokayaing Thamaing" by U Ba Thein of Kyauksè, a note written by Mr. D. J. A. Campbell, Deputy Commissioner, in 1888, and remarks in the Original Settlement Report, dated 1891. During the century which elapsed between the periods considered in the first and

the last two accounts, certain slight modifications seem to have been made in the nomenclature and duties of the officials.

The principal officials in charge of the canals in Burmese times were the two *wuns* of the *Lekayaing* (Panlaung area) and *Ngakayaing* (Zawgyi area), both resident at Kyauksè, whose charges corresponded roughly with the Myittha and Kyauksè Subdivisions of the present day. These *wuns* appear to have been responsible directly to the *hluttaw* not only for the maintenance of the canals and distribution of water among the channels but also for the collection of revenue, the suppression of crime, and the administration of civil and criminal justice throughout their charges. On the revenue side, their duties included the supervision of the measuring of lands irrigated from the canals, assessing the water rates on private land and rents on state land and seeing that the whole demand was realised and paid into the royal treasury. Appeal from their judicial decisions lay to the "*hluttaw*."*

Under the *wuns* each weir was in charge of a *sègyi*. He was responsible to the *wun* for the maintenance and repair of the weir, for which he ordinarily relied upon the *binthas*. Once a year, in *Tabodwè* and *Tabaung*, he called up the cultivators of the irrigated lands for the special annual repairs, and if any extensive damage occurred at other times, they were liable to obey his summons.† If there was an unusual accumulation of sand in the canals or at the weir, or if damage occurred the repair of which was beyond the *sègyiè's* capacity, he could appeal to the *wun* for orders and assistance.‡

If anything happened to the weir because of the *sègyi's* neglect he was liable to severe punishment at the hands of the *wuns* which might even extend to the death penalty.§

He was also responsible for the distribution of water among the irrigated lands, the measurement of the area irrigated by his canal, the measurements and arrangement of pipes, and for the production of suitable offerings at the

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* Report by Mr. D. J. A. Campbell, Deputy Commissioner, Kyauksè to Commissioner, Central Division, dated 27th July 1888. *Kokayaing Thamaing*, page 57.

† *Kokayaing Thamaing*, pages 19 and 55.

‡ *Kokayaing Thamaing*, pages 26.

§ Report by Mr D. J. A. Campbell, Deputy Commissioner, Kyauksè to Commissioner, Central Division, dated July 1888. Settlement Operations, Kyauksè District, 1890-91, page 7.

weir pagoda, which in the case of the Pyaungbya Weir, included fire-works and models of white elephants.*

The above account of the duties and responsibilities of he *wuns* and *sègyis* would seem to be true both in the 18th century and in the period immediately prior to the annexation.

As regards the revenue duties and remuneration of the *sègyi* changes appear to have taken place.

In the 18th century ***sittans*** the only mention of his remuneration occurs in the case of the Pyaungbya *sègyi* where each *pè* (1·75 acres) of land in his charge had to contribute four annas yearly towards his maintenance.†

The references to his revenue duties at that date show that he had a general supervision over the collection of the revenue and was responsible for seeing that the proper share of the crops taken by Government found its way into the royal barns.‡

As regards the period immediately before the annexation, the Settlement Officer writes as follows.—

"The *sègyi* received a monthly salary of Rs. 50 and commission on the *bobabaing* water rate. But he was also the authority who distributed the land among the *ahmudans* and as he would naturally give the best land to the highest bidder, he earned about Rs. 1,000 in this way. In the time of the Yenangyaung *Mingyi* (1869) the *sègyis* were deprived of their powers. The *myothugyis* were made responsible for the revenue and eight or nine *taunggaungs* (collectors on 1,000 *pès*) placed under each. This system, however, only lasted three years." § This statement would seem to be correct as far as it goes, but local information adds that the *sègyi* is also responsible for the annual assessment of revenue on state land other than ***ahmudansa***, for the collection of the revenue on his canal, and for the distribution of state land other than ***ahmudansa*** among candidates for its occupation. Mr. D. J. A. Campbell definitely states that the *sègyi* was a salaried official, not paid by commission, and had nothing to do with the collection of revenue, which was in the hands of the *lèganng*. In this opinion he is supported by Mr. J. M. B. Stuart (Old Burmese Irrigation Works, page 22), but as far as can be judged from

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* *Kokayaing Thamaing* pages 24 and 26.

† *Kokayaing Thamaing* page 24.

‡ *Kokayaing Thamaing* page 56.

§ Report on Settlement Operations, Kyauksè District, 1890=91, page 4.

such local information as is still available, it is incorrect to say that the *sègyi* received no commission and had nothing to do with the collection of revenue.

The ordinary maintenance and repair of the weirs and canals was in the hands of the *sè-binthas*, persons selected from the inhabitants of the irrigated lands and living in special villages close to each weir, where, exempt from all other duties and the payment of *thathameda*, they were responsible for guarding the weir from fire in the dry weather and drift wood in times of floods. Originally they enjoyed a certain amount of land free of revenue, but this was ended in the reign of King Thibaw. In the case of the Pyaungbya Canal, according to a *sittan* of 1793 each *pè* of land in the occupation of members of military units had to contribute one *pyi* of rice for their maintenance. Not only were they expected to keep a continual watch upon the weir, but, as far as they were able, they had to repair breaches and were responsible for the general safety of the canal.*

The special annual repair of the weirs and the cleaning of the channels was beyond the capacity of the professional *sè-binthas* and for this purpose the *sègyi* called up the inhabitants of the lands irrigated by his weir. This annual repair of the weir took place in the months of *Tabodwè* and *Tabaung* when the *lôkthas* of the irrigated lands under their *yethaukgaungs* had to collect tools, wood, stone, and supplies, each man according to his strength (*i.e.*, extent of his lands) and bring them to the weir. After this material had been collected at the weir, the work of reconstruction or repair was carried out by these cultivators under the direction of the *sègyi*, *myingaungs* and *dainggaungs*. That is to say their military organisation was brought into use for this purpose, and the members of the different units worked under their own officers. These annual repairs in the dry season were probably of an extensive nature, as the Burmese weirs were susceptible to severe damage by floods.† Material used was paid for by the Government through the *wun*, as was skilled work such as pile driving. Unskilled labour, such as filling in stones, was performed by the cultivators without payment. As regards the cleaning of the channels, when these became shallow and there

* Report by Mr. D. J. A, Campbell, Deputy Commissioner, Kyauksè, to Commissioner, Central Division, dated 27th July 1888. *Kokayaing Thamaing*, pages 19, 28, 34 and 35.

† *Kokayaing Thamaing*, pages 19, 31 and 35.

was not enough water for cultivation, it was the duty of the *sègyi* to summon the cultivators in his jurisdiction and cause them to clear out the deposits, for which labour they received no remuneration, since it was for their own benefit.*

Other obligations which fell upon the cultivators of the canal lands were assistance to the *binthas* in guarding the weirs against fire and drift-wood, offerings to the *nat* shrines and pagodas, and the feeding of the *wuns* and their *sayes* when these made their annual tour of inspection.†

After the construction of each weir a pagoda and *nat* shrine were built within the precincts of the weir, which area also included the *sè-bintha* village. These shrines of the Sèdaw-u *nat* are dedicated to the Queen of King, Anawrata, the sister of the Shan King of Myogyi, who, according to tradition, was buried alive to ensure the success of the Kokayaing canal system when it was commenced by her lord (*vide* Chapter III).‡

When the *wun* and his *saye* came on tour, the inhabitants of the lands which paid water tax had to build huts for them, their servants and horses, to give them presents, and feed their attendants, horses and elephants.§

There do not appear to have been any important changes in the duties of the *sè-binthas* and obligations of the cultivators in the century preceding the annexation.

In the case of the Nwadet and Kunse Canals a *sittan*, dated 1784, mentions another class of permanent weir employees called *pindaungs* whose duties appear to have been the same as those by the ordinary *sè-binthas.* ||

Immediately after the annexation the British Government adopted the policy of retaining the Burmese system, outlined above as far as possible. The situation is well described in the following extract from a report by Mr. D. J. A. Campbell, Deputy Commissioner, Kyauksè, dated 27th July 1888, in which it will be seen that one departure appears to have been made from the Burmese practice, *i.e.*, the *sègyi* became definitely a revenue official in addition to his other duties. "There is a *sègyi* in charge of each weir; he has to keep the weir in repair, look after the

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* Report by Mr. D. J. A, Campbell, Deputy Commissioner, Kyaukse, to Commissioner, Central Division, dated 27th July 1888.

† *Kokayaing Thamaing*, pages 19, 24, 26 and 36.

‡ *Kokayaing Thamaing*, pages 24 and 26.

§ *Kokayaing Thamaing*, page 25.

|| *Kokayaing Thamaing*, pages 33 and 35.

distributary channels, and he has also to send in assessment rolls and collect the revenue. He is paid by a commission of 10 *per cent.* on all collections up to Rs. 10,000 and 5 *per cent.* on collections above that amount. One-third of this commission is paid to the *ségaungs*. *Sè-lintha* villages are maintained at each weir to look after it, and exempted from *thathameda*. When a breach has to be closed or a channel to be dug out, the work is done by the cultivators who draw water from the channel. They are called out by the *sègyi* and work for nothing. The repairs to main weirs, *i.e.*, cost of material, wages of carpenters, etc., are paid for by Government. The filling in of stones is done by the cultivators.

There are certain difficulties in the way of carrying out these arrangements fully. The *sègyi* has no power over the cultivators and we have nothing like the power over the *sègyis* that the Burmese Government had. I would call attention to the punishments inflicted on *sègyis* in Burmese times when their weirs went wrong. These extended even to death. Of course these cannot be revived and in their place very close supervision is required, and this can, in my opinion, be best exercised by a professional engineer. The supervision by such an officer would also be a check on the present tendency to scamp work and make money out of repairs to weirs. Owing to the depopulation of the country from disturbances, etc., and the small area under cultivation, there are not enough cultivators to keep the channels dug out and in proper order. In some parts where there were formerly perhaps 20 villages drawing water from a certain channel, there are now only four—owing to non-cultivation too the channels have got much more obstructed and require more labour to clear them out. The result is that the work of clearing these channels falls very heavily on the few cultivators that there are. To remedy this I have in several cases recommended the making of money grants towards clearing channels, about half the actual cost being granted, the cultivators doing the rest. I think that until cultivation is more extensive, this principle should be accepted."

At this period, immediately after the occupation of the district, the control of the irrigation was divided between the Deputy Commissioner and Executive Engineer, some works being under the former and others placed entirely under the charge of the latter. The results were found anything but satisfactory, and the weirs and main canals

were placed under the control of the Irrigation Department while the distributaries and distribution of water were left to the Deputy Commissioner. Subsequently the Irrigation Department took over all the main distributaries, leaving the minor distributaries and water-courses to the care of the cultivators.

Canal Administration ; (ii) Present.

The administration of the irrigation system as it exists to-day (1921) may be outlined as follows :—

The Kyauksè irrigation system is at present under the charge of the Executive Engineer, Mandalay Canal Division, resident at Mandalay. He is assisted by two Subdivisional Officers resident at Kyauksè and Myittha, who control the Zawgyi and Panlaung systems respectively, and correspond to the *wuns* of the Ngakayaing and Lekayaing of Burmese times. Under these Canal Subdivisional Officers are Canal Inspectors, four in the Zawgyi area and three in the Panlaung. The charges of the Canal Inspectors are distributed as follows :—In the Panlaung area one inspector at Ywakainggyi for the Kinda Canal System ; one at Maingmaw for the Nathlwè, Mèzèbintha and Taungdaw Canals ; one at Myittha for the Sama Canal. In the Zawgyi area, one at Hanmyinbo in charge of the Nwadet Canal, one at Thindwè Weir for the Ngapyaung and Thindwè Canals, one at Kyauksè for the Minyè and Tamôk Canals, and one at Singaing for the Zidaw Canals. A number of surveyors are distributed over each inspector's charge to supervise the proper distribution of water and check the crops grown on the irrigated ground. Each Canal Surveyor is in charge of fifteen to twenty *kwins*. At each weir are still stationed a number of *binthas*, under a *bingaung*, who regulate the supply of water to the canals and generally attend to the headworks. At intervals along the Canals, a *bintha* is stationed at the heads of distributaries and branch Canals, to regulate the supply of water from the main Canals. In addition to regulating the water supplies, these men are required to maintain a register, recording the gauge-reading and depth of water, generally three times a day. The profession is hereditary, the present employees being often descendants of those men who were planted by the Burmese kings in the weir villages. In the maintenance of the canals and repairs, subordinate officers are employed whose charges are roughly coincident with those of the Canal Inspectors. They have nothing whatever to do with the distribution of water. Labour for the cleaning and maintenance of the main channels and A Class

distributaries, for which the Irrigation Department is responsible is obtained by hiring labourers through village headmen. The cleaning and maintenance of other distributaries is in the hands of the villagers, who elect a *myaunggaung* for this purpose and for the distribution of water among the fields. Villagers contribute labour under the direction of the *myaunggaung* in proportion to the size of their irrigated holdings.

Ordinarily at the height of the rains, there is enough water to supply all the canals at the same time. At the beginning of the rains, when water is still short, it is necessary to distribute the available supply among the different canals in turn.

This distribution will best be understood by considering the method in force in the Zawgyi area. Here the canals are grouped into three systems : (1) The Nwadet Canal, (2) the Ngapyaung, Thindwè, Minyè and Tamôk Canals, (3) the Zidaw Canal. Water is supplied to each of these systems for a period of five days, the second system being supplied after the first and the third system after the second. If there is any surplus water after one system has received its full supply, the next system is supplied, and only when those two systems are receiving their full supply will the last system take water. Thus ordinarily each canal receives full water for five days, surplus water for another five days and closed for five days. Each canal inspector is given definite gauges to which he must work. When the river gauge rises to a certain mark, he must open his canal, and these limiting gauge marks reworked out so that each canal receives a full supply before any water is allowed to waste down the rivers. During heavy rain, to avoid flooding and prevent breaches, the weir *bingaung* has orders to close the canals.

The distribution of water among the fields is controlled by a *myaunggaung* elected by the villagers, who arranges the order in which cultivators shall receive their supplies, and settles any disputes which may arise over this delicate matter. In case of disobedience to his order, he inflicts small fines, or punishes the offender by restricting his water-supply.

CHAPTER V.

FORESTS AND MINERALS.

Forests; Area of forests; Legal position; A.—Commercial reserves; Privileges granted; Past and present systems of management; Works of improvement; B.—Non-commercial reserves; Privileges granted; Past and present systems of management; Unclassed forests; Minor forest produce; Extraction; Establishment; Revenue; Minerals.

Area of Forests. There are 396 square miles of reserved forest and 269 square miles of unclassed forest in Kyauksè district.

These forests form, at present, the least important corner of the Meiktila Forest Division, both from a commercial stand-point and from the point of view of supplying local demands.

Legal position. The reserved forests are shown below, with their particulars.

Yeyaman Reserve—346 square miles, constituted under Notification No. 336, dated 18th August 1902.

Pyetkaywe Reserve—38 square miles, constituted under Notification No. 161, dated 4th May 1903.

Kyauksè Reserve—1 square mile, constituted under Notification No. 151, dated 12th August 1907.

Dattaw Reserve—8 square miles, constituted under Notification No. 154, dated 14th August 1907.

Kalagyaung Reserve—3 square miles, constituted under Notification No. 159, dated 19th August 1907.

The above reserves may be classed as A.—commercial reserves and B.—non-commercial reserves.

A.—Commercial Reserve. The Yeyaman is the only reserve which is at present of any commercial importance for producing timber. The reserve is bounded on the north by the Myitngè river and consists of the basins of several large streams, including the Palu, Yegyan, and Salin feeders. All those streams and their branches are enclosed by very high and steep limestone hills and the upper two-thirds of the slopes are clothed only with open stunted forest of the dry deciduous hill type. This is valuable as retaining what soil there is on those steep slopes, but commercially speaking the valuable forests are restricted to the depths of the valleys.

The valuable species occurring include teak which is present over about two-thirds of the area, *pyinkado*, *padauk*, *ingyin*, and *thitya*, while good bamboos occur in the lower localities.

Privileges granted. As regards privileges, 18 men of Zayitkè, 5 men of Hleza, 17 men of Hele, 20 men of Nanhu, 8 men of Ongyaw and 23 men of Kontha cut *taungyas* under rights granted at Settlement within certain specified limits.

Rights to pasture, water, bamboos and rights-of-way were granted to the above villages as well as to Yaman and Kyaung villages. It is hoped to utilise some of the population to their own advantage as well as that of the Department, as soon as properly controlled *taungya* regeneration can be introduced over the portion of the reserve free from such rights.

Past and present systems of management. From 1911-12 to 1914-15, 6,336 teak trees were girdled under a lease held by Messrs. the Bombay-Burmah Trading Corporation, Ltd., in accordance with the provisions of a girdling scheme and these are now under extraction. A revised girdling scheme is now under course of preparation, which fixes an estimated annual yield. From 1911-21, 461—418 tons of unreserved timber were worked out under this agency. Three small purchase contractors work out timbers other than teak in the more accessible portions near the Myitngè river.

The whole reserve except the western fringe is at present inaccessible to extraction of unfloatable timbers, owing to the rapids between Salin and Leza forbidding floating with the aid of bamboos. To render the reserve accessible for non-floating species, a cart road is necessary following the left bank of the Myitngè river as near as possible and tapping the side feeders near their mouths. If the reserve should in future be worked under a jungle-wood lease, this very expensive and difficult but necessary road must be constructed.

Works of improvement. During the years 1916-17 to 1920-21 nearly 16 miles of forest bridlepath have been constructed between Yaman and Zayitkè at the cost of Rs. 1,127-5-0. This is a commencement to open up the reserve to inspection, which, over the majority of the area, has now to be reached, *via* Maymyo, a week's journey from the Division headquarters.

B.—Non-commercial reserves. The Pyetkaywe, Dattaw and Kalagyaung reserves were primarily constituted to prevent future denudation of the hill-sides and in addition to provide fuel and small timbers for local requirements.

The Kyauksè reserve was constituted merely on sentimental grounds, to retain at least a scattered scrub jungle instead of a barren wilderness over the low hills immediately to the east of Kyauksè town. The Pyetkaywe

reserve contains some teak and *pyinkado*, besides *thitya*, *ingyin*, and *padauk* and, while not of commercial importance, will supply requirements of the future to the local population.

The Dattaw and Kalagyaung Reserves contain rather open forest of *than*, *dahat*, *tazaung* and cutch, while the former also contains some *taukkyan* on the higher slopes and a plentiful supply of *hmyinwa* in places.

Privileges granted. In the Pyetkaywe Reserve 519 households hold rights, including the limited use of bamboos, posts, *thetkè*, fuel, pasture and rights-of-way.

In the remaining reserves a few petty rights to grass cutting and rights-of-way were granted.

Past and present systems of management. The reserves are not opened to any systematic exploitation at present.

Unclassed forests. The only unclassed forests of commercial importance are in the Yeyaman hill-tracts to the west and south of the Yeyaman Reserve. A few timber traders work out small quantities of timber under pre-paid licenses, but a considerable portion of the area does not contain timbers of commercial size.

Minor forest produce. Bamboos are extracted from the Yeyaman Reserve and unclassed forests and a number of licenses are issued annually to work out *thitsi* and bats, guano from the unclassed forests. Lac and *pwènyet* are sold from the Yeyaman Reserve under a monopoly contract for a year at a time.

Extraction. The bulk of the extraction of all forest produce finds its way down the Myitngè valley and is consequently largely sold in the Mandalay market.

Establishment. The forest establishment consists of one Ranger in charge of the Kyauksè Range which corresponds in area to the district, and six beat officers distributed among the various defined beats. Their duties lie chiefly in the check of produce removed from the forests and in the prevention of illicit removal.

Revenue. The average revenue of the past five years, 1916-17 to 1920-21 is Rs. 2,504.

This small amount will be increased considerably when royalty commences to be paid on the teak now under extraction from the Yeyaman Reserve.

Minerals. The only minerals of commercial value which are found in Kyauksè District are lime, marble, and road-metal. Limestone is abundant, and is used to a small extent for the manufacture of lime in a few places, such as the hills

east of Bèlin railway station and on the north-east flank of Kyauksè hill. This lime-stone would make a serviceable building stone. White marble, somewhat micaceous in places is known in three localities (1) near Hngetka-daung 3½ miles east of Kyauksè, (2) five miles south-east by east of Kyauksè, (3) Taungu six miles south-east by south of Kyauksè, at the end of the Kalagyaung hill. The outcrops occupy a total area of something like one and a half square miles. This marble is very compact and close in grain, and being susceptible of a very high polish, produces a beautiful effect. In this fineness of texture it is markedly different from the marble occurring at Sagyin and Mandalay and still more distinct from that which occurs in the Ruby Mines District.

Good road-metal can be obtained from two places in the district, Swetaung, about 6 miles east south-east of Singaing railway station, and Môndaung hill, 10 miles east of Thabyedaung railway station, close to the Nathlwè weir. The stone in both cases is a felspar porphyry of volcanic origin, in unlimited quantity with a small overburden. It wears evenly and consolidates well, and is regarded as one of the best road metals in the province. It has not yet been used extensively; as both sources are so far from the railway as to make transport costly, and the Mondaung quarry is situated in a particularly unhealthy spot. A laminated limestone is obtained from Kyauksè hill at a point about one mile from the station; though suitable for building purposes it makes a bad road metal. Soft sandstone, which has been used as road metal, has been quarried at Mogaung, Taungdaw, Ingon, and Lungyaw but only to a very small extent. *Kankar* is found a short distance south-east of Paleik and at Yitkan, in the south-west of the district. Mica, garnets, zirkons, and spinels exist at Kyauksè hill.

CHAPTER VI.

OCCUPATIONS AND TRADE.

Classification of people by occupations; Industries; Weaving; Pottery; Minor Industries; Trade routes; Trade with the Shan States; Trade with the Dry Zone districts; Water borne trade; Bazaars and Brokers:

Classification of people by occupations. A Census of the population of Kyauksè District has been taken four times since the annexation, in 1891, 1901, 1911, and 1921, but at the time of compiling this gazetteer, figures showing the distribution of the inhabitants according to occupations in 1921 were not available. In 1891 and 1901

the same classification by occupations was adopted, but in 1911 a new system was introduced, which makes the comparison of the figures difficult. The following summary shows the number of persons dependent on different occupations for their livelihood as returned in these three censuses : in 1891 and 1901 they are divided into nine classes, and in 1911 into twelve classes :—

Occupation.	1891.		1901.	
	Number.	Percentage under each class.	Number.	Percentage under each class.
1. Public and domestic service.	4,245	3·39	3,910	2·79
2. Dependent directly on agriculture.	70,076	56·01	73,029	52·19
3. Dependent indirectly on agriculture.	10,736	8·58	12,158	8·69
4. Live stock ...	1,852	1·48	3,103	2·22
5. Fishermen, etc. ...	1,745	1·39	1,417	1·01
6. Building materials	1,552	1·24	1,724	1·23
7. Religious ..	2,887	2·31	2,832	2·03
8. Medical ...	910	·73	1,787	1·28
9. Other occupations	31,119	24·87	39,969	28·56
Total ...	125,122	100·00	139,929	100·00

Occupation.	1911.	
	Number.	Percentage under each sub-class.
1. Exploitation of the surface of the earth.	84,208	59·54
2. Extraction of minerals ..	142	·11
3. Industry	15,759	11·14
4. Transport	8,652	6·12
5. Trade	16,213	11·46
6. Public Force	723	·51
7. Public Administration ...	1,815	1·28
8. Professions and Liberal Arts ...	4,415	3·12
9 Persons living on Income ...	23	·02
10. Domestic Service	1,076	·76
11. Insufficiently described ...	7,642	5·41
12. Unproductive	758	·53
Total ...	141,426	100·00

Industries. There are no factories in the district, and all industries may be said to be either agricultural or supplementary to agriculture. The "non-agricultural" workers are engaged upon meeting the wants of the agricultural community, either by making their implements, clothes, and household furniture, or by working up their produce to a saleable state, trading in it, and transporting it to its markets. The following table shows the number of persons engaged in 1911 in the chief of these village industries, both the actual workers (*i.e.* those who devote their whole time to the industry) and those who are partly agriculturalists, only giving some of their time to the trade:—

—	Actual workers.		Partly agriculturists.	
	Male.	Female.	Male.	Female.
Sawyers and carpenters	703	619	97	45
Basket makers ...	209	379	48	29
Iron workers ...	143	52	28	3
Rice pounders and huskers.	899	2,959	118	804
Sugar makers ...	22	273	8	33
Toddy drawers ...	257	161	32	2
Builders ...	120	12	10	...
Stone masons ...	114	...	10	...
Cart makers ...	70	...	12	...
Goldsmiths ...	293	82	107	1

The output of these village industries is only sufficient to meet the local demand: there is little or no margin for export to other districts.

Weaving. Weaving has been omitted from the above list because a certain amount of more recent information is available. In 1921 there were 1,621 hand looms in the district, all of the primitive kind, without a flying shuttle, and operated by a single person. They are to be found in most of the villages of the district, but are particularly plentiful in the unirrigated area west of the Samôn, where most of the cotton of the district is grown. In this Trans-Samôn area, over 600 are in use, practically all employed upon the weaving of cotton. The majority of the weavers of the district devote their attention to cotton, producing both the rough *pinni* jackets, particularly useful to the cultivators, and longyis of finer material. Silk is woven in the north of the district round Paleik, which is not far distant from Amarapura, the centre of the industry. The Paleik silk is sent to Mandalay for sale.

Formerly the Paleik region was renowned for the weaving of *acheik* which was used by the court in the time of the Burmese Kings, but this material is no longer worn and the industry has died out since the annexation. Statistics of the number of persons who make their livelihood wholly or partly by their looms are not available for 1921. In 1911, 126 men and 475 women lived by weaving cotton and 54 women supplemented their agricultural incomes by this means. In the same year 103 men and 482 women were returned as living by silk weaving. Weaving in Kyauksè District is at present purely a household industry. It is not usual to find more than one or occasionally two looms in a single house.

Pottery. Pot-making is localised in two areas, at Kyaungbangon, Onletkauk, Nanni, and Myedaw on the Panlaung River, a short distance above its junction with the Samôn, and at Ywamôngyi. The pots manufactured in the former area are brought into Kyauksè for sale, but those made at Ywamôngyi are not exported but marketed at the village bazaar. The localisation of the industry at these two points seems to be due to tradition rather than to any unique quality in the earth which is used.

Minor industries. The work of blacksmith is localised to some extent in the village of Gwe, west of the Samôn where some 50 persons are thus employed. Lime is burnt on a small scale at the foot of Kyauksè and Bèlin hills and at Yebawgyi. Fishing is carried on to a small extent at the Sunyè and Minhla tanks, on the Zidaw Canal and the Myitngè River.

The manufacture of ghi (called by the Burmese *mathaga* or *tawbat*) and cheese is carried on to a small extent in the neighbourhood of Ywabo, on the borders of the Singaing township and the Yeyaman hill-tract. This is apparently an off-shoot of the dairy industry in Tada-u township of Sagaing District, which has been described in detail by Mr. A. McKerral in the Agricultural Survey of Sagaing District, 1911.

There are five small rice mills in the district, two at Kyauksè, two at Singaing and one at Myittha. Sugar-cane is crushed in small presses worked by oxen in some of the villages near Singaing.

With the above exceptions, industries are not specially localised but are carried on here and there throughout the villages of the district and do not exhibit any unusual characteristics.

Trade routes. The trade of the district follows four different general directions, (1) the railway, (2) the pack transport routes

from the Shan hills, (3) the cart roads which connect the district with Meiktila, Myingyan, and Sagaing, (4) the Panlaung and Myitngè Rivers.

Of these, the railway is much the most important. The export by rail includes the bulk of the surplus agricultural produce of the district, chiefly paddy, plantains, chillies, sugar-cane, onions, and betel leaf. Imports by rail include most of the necessaries and luxuries of life which are not produced within the district, specially piece-goods, petroleum, and European and Indian manufactured articles.

Trade with the Shan States.

The importance of the Shan trade routes has been diminished by the opening of the Thazi-Kalaw railway, which affords an easier and cheaper outlet for much of the produce of the Southern Shan States which formerly found its way by pack-transport down the passes into Kyauksè District. Some traders, who till recently frequented the Myittha bazaar, now take their wares to Aungban on the railway. There is, however, still a considerable trade by pack bullocks and coolies, importing *thanatpet* which is used for the outer covering of cheroots, oranges, and other fruits into the district and taking back fish, oils, and betel.

The following tables show the volume and value of the trade by the Shan hill tracks during the year 1919-20:—

Quantities and value of the principal articles of merchandise imported from the Shan States by land into Kyauksè during the year 1919-20.

Articles.		Ingôn route.		Taungdaw route.		Lungyaw route.	
		Weight.	Value.	Weight.	Value.	Weight.	Value.
Animals, living (for sale)—			Rs.		Rs.		Rs.
Horses, ponies and mules.	No.	341	23,620	...	...	4	1,120
Cattle ...	... ,,	15	1,140	6	300	...	...
Other kinds	,,	2,905	85.815	165	6,579	20	800
Cotton, Raw	... Mds.	...	...	32	250	...	...
Drugs and Medicines—							
Other sorts, not intoxicating.	,,	368	2,635	87	300	...	...
Fruits, vegetables and nuts—							
Cocoanuts	... No.	...	...	800	64	...	...
Garlic ...	... Mds.	1,383	13,860	..	...	4	30
Oranges ...	... ,,	5,492	31,236	...	...	..	...
Potatoes ...	... ,,	3,855	13.238	...	...	28	120
Other kinds	... ,,	1,259	4,285	7,851	26,710	1,546	5,795
Grain and Pulse—							
Gram and pulse	... Mds.	...	...	1,504	7,251	...	...
Gums and resins	... ,,	33	375	...	...	7	53
Hides of cattle	... ,,	86	3,810	...	..	...	...
Sticks and other kinds	,,	...	...	9	200	...	...
Leather manufactured	Val.	...	5,180	...	...	...	3,289
Mats ...	... ,,	...	...	...	1,025	...	...

Articles.	Ingôn route.		Taungdaw route.		Lungyaw route.	
	Weight.	Value.	Weight.	Value.	Weight.	Value.
		Rs.		Rs.		Rs.
Paints and Colours—						
Other sorts ... Mds.	198	9,324	53	2,220	25	1,124
Wet and pickled tea ... "	13	150	...	...	...	...
Provisions, other kinds "	2,786	13,793	...	...	...	...
Oil seeds—						
Till or Jinjili ... Mds.	...	...	21	150	...	...
Spices—						
Betelnuts ... Mds.	...	...	948	11,240	...	...
Thanatpet ... "	5,150	1,45,121	20	530	4,686	1,84,346
All other articles of merchandise—						
Unmanufactured ... Val.	...	520	...	...	...	30
Manufactured ... "	...	1,590	...	21	...	1,301
Treasure-rupees ... "	...	75,744	...	33,895	...	49,842

Quantities and value of the principal articles of merchandise exported to the Shan States by land from Burma during the year 1919-20 :—

Animals, living (for sale)—						
Cattle ... ... No.	11	640	...	...	...	...
Apparel ... ... Val.	...	27,950	...	13,175	...	3,920
Cotton—Raw manufactured Mds.	...	...	...	...	...	...
Twist and yarn (European) "	...	...	...	...	39	4,725
Twist and yarn (Indian) "	...	...	...	...	101	11,510
Piece-goods (European) "	10	4,800	10	4,800	43	12,110
Piece-goods (Indian) "	...	...	36	18,815	...	...
Drugs and Medicine—						
Betel leaf or pan . Mds.	787	7,835	...	...	...	...
Other sorts not intoxicating. "	...	...	...	...	79	3,830
Fruits, vegetables and nuts—						
Cocoanuts ... No.	...	...	...	...	700	54
Grains and Pulse—						
Rice husked ... Mds.	...	...	236	1,620	...	...
Rice unhusked ... "	...	...	...	...	70	160
Iron ... ... "	...	...	...	...	44	1,130
Oils—						
Petroleum ... Mds.	1,422	11,995	...	...	951	8,430
Other sorts ... "	1,983	60,285	298	12,125	...	...
Paints and colours—						
Other sorts .. Mds.	2	1,500	...	...	...	...
Provisions—						
Condensed Milk ... "	...	...	...	...	...	...
Fish, dry (unsalted or salted). "	1,724	56,602	152	5,780	363	11,219
Fish, wet, salted (ngapi) "	3,861	34,083	39	620	618	8,558
Salt ... ... Mds.	2,837	12,990	96	494	1,259	5,199
Silk-manufactured (piece-goods). "	...	...	...	...	13	1,900
Sugar unrefined ... "	...	...	...	...	13	90
Spices—						
Betelnuts ... Mds.	1,327	21,273	...	...	350	4,839
Tea—						
Foreign, black ... "	456	26,050	145	8,525	...	...
All other articles of merchandise :— Manufactured.	...	21,250	...	528	...	964
Treasure Rupees ...	...	2,06,409	...	29,435	...	1,11,876

Most of the produce imported by the Natteik pass (Ingôn route) is disposed of by the traders at Nwagu bazaar, the point of arrival in the district. The produce brought in by the Lungyaw route goes to Myittha bazaar.

It is believed that if the Lungyaw track were made passable for carts as far as Ye-u there would be a considerable revival in trade, as some of the produce which now goes to Aungban and Kalaw would then be recaptured by this route.

Trade with the Dry Zone districts. The tracks from Meiktila, Myingyan and Sagaing districts are chiefly used in the cold weather when a great number of carts come in from the Dry Zone, to fetch paddy from the irrigated area. At the same time they bring in a certain amount of produce from their own villages, particularly fire-wood.

Water borne trade. Water traffic was formerly of great importance, both on the Zidaw Canal and Panlaung River. The former, since it has been remodelled, is no longer navigable and the great quantity of paddy, which was formerly shipped by this route through Paleik to the Myitngè and Irrawaddy, is now carried by rail. Similarly the plantains of the Sama Canal and the paddy of the Myittha region which were formerly exported by the Panlaung route, are now practically all carted to Minzu and Myittha railway station, though an occasional boat-load of plaintains is still sent from Ywamôngyi. A small amount of timber and bamboos are floated down the Panlaung River from the Shan hills. When they reach the Kinda weir, on the border of the district they have to be landed and dragged round the weir by buffaloes or oxen, and thrown in again below the falls. On arrival at the Kyimè weir they have to be landed a second time, as no floating is allowed below this point. Logs are usually sent by cart, from the Kyimè weir to Kumè Road railway station. Timber and bamboos cut in the Yeyaman hill-tract are floated down the Myitngè.

Bazaars. As regards the distribution of goods within the district, there are shops at Kyauksè, Singaing and Myittha, but the five-day bazaars are the principal agencies for the exchange of commodities. They are apparently a Shan institution. Villages at which bazaars are held fall into groups of five and at each village within a group in rotation, a bazaar is held once in five days. Each group has its own party of sellers, who make the round of the component villages, attending the bazaar in the morning, then packing up and moving on with their carts during the afternoon to the village next in rotation, where they camp for the night on the market place, till trade begins again in the morning. They offer for sale all the necessaries and luxuries which are ordinarily required by the cultivator and his household. Villagers often bring in commodities of which they have a surplus to sell, and make their purchases with the cash

which they realise. The system of itinerant bazaars is most convenient to the villagers, as it reduces the distance which they have to travel to do their marketing.

The following is a list of the bazaars which are in existence in 1921, arranged roughly in order of the volume of the trade:—Kumè, Ywamôngyi, Singaing, Myittha, Yewun, Thitkauk, Thanywa, Paleik, Bèlin, Minzu, Thalun, Ywakainggyi, Thamandalin, Hanmyinbo, Dwehla, Dayègaung, Nwagu, Kyauksauk, Thabyedaung, Puttaing, Ywanan, Èbya. Those at Lungyaw, Singaing railway station, and Ywapale are not in use, as the bids offered for the bazaar licenses have been too small to justify their continuance.

Of the above list, Dwehla, Bèlin, Minzu, Èbya, Thabyedaung, Thalun, Ywapale and Singaing railway station bazaars have been introduced since the annexation. The Èbya and Ywapale bazaars are not a success; Dwehla is at the important road bridge leading into Sagaing District; the remainder are at railway stations. Since the annexation Kyettha and Paukmyaing bazaars have ceased to exist. Kyauksè bazaar, the most important in the district, is not a five-day bazaar but is held daily. The Myittha bazaar is held twice in five days.

These bazaars suffice to meet the ordinary daily needs of life. They are supplemented by the annual pagoda festivals where the year's supply of special articles are purchased such as agricultural implements and their spare parts, carts, oxen, ponies, and baskets. There are seventeen annual pagoda festivals in the district. (*Vide* Chapter III.)

The cultivators in the district sell their paddy to the ordinary itinerant brokers working on behalf of mills. Plantains are sold to middlemen who live in Minzu and Ywamôngyi villages and export the fruit to Mandalay and elsewhere where it is sold to plantain traders for distribution. The purchase and export of chillies is in the hands of an old established Chinese Colony, living at Thalun and Myittha. Brokers.

CHAPTER VII.

MEANS OF COMMUNICATION.

Railways; Rivers; Roads; Metalling; Bridges; Principal roads of the district (i) Provincial funds; (ii) District funds; Village roads; Bridle-paths; Posts and Telegraphs; Bungalows.

The most important means of communication in Kyauksè is the main railway line from Rangoon to Mandalay which runs from south to north through the heart of the Railwa[ys.]

irrigated area. There are eight stations on this length of line: Thabyedaung, Kumè Road, Myittha, Minzu, Kyauksè, Bèlin, Singaing and Paleik. Thanks to the small size of the district and the central alignment of the railway, it may be said that most of the villages, excluding those of the Yeyaman Hill-tract, are within very easy reach of a railway-station, none of them being more than a day's drive by bullock cart away. Access to the railway is provided by feeder roads, well designed and adequate for cart traffic. In addition to the ordinary passenger traffic, a great quantity of agricultural produce is exported by train. The cold weather is the busiest time, when the *Kaukkyi* paddy crop is being carried to the mills, but there is a steady export of other crops throughout the year, of which plantains, loaded at Minzu and Myittha Stations, are the most important. The only branch line in the district is a short length of track leading to the Thindaung ballast quarry, one mile south of Bèlin Station. The chief bridges are those which cross the Myitngè, north of Paleik, the Zawgyi south of Singaing and at Kyauksè, the Dan *chaung*, south of Minzu, and the Panlaung, south of Myittha; there are very many smaller bridges and culverts over canals and irrigation channels.

Rivers. Prior to the annexation, the waterways of Kyauksè were a most important means of communication, carrying a considerable boat traffic, by which the agricultural produce, now sent by rail, was exported to Mandalay. The Panlaung and Samôn Rivers and the Zidaw Canal appear to have been navigated extensively, but at the time of the British occupation the Zawgyi River was not in use. In the past no doubt there was boat traffic on the Zawgyi from Kyauksè to the Myitngè, but most of its water had become diverted down the Zidaw Canal, and consequently the river bed silted up. Mr. J. D. Grant in submitting a report on the Kyauksè Canals in May 1887, remarked that the Zidaw Canal was of great importance as a line of navigation in making a proposal to have a single dam on each of the two rivers, Zawgyi and Panlaung, for irrigation purposes; he also considered the question of navigation canals and locks. He believed that the best plan would be as a rule to keep the navigation channels quite distinct from the irrigation canal; the latter, for convenience of inspection, should run parallel with the navigation channel. This arrangement would admit of navigation being maintained all the year round, as the water would always suffice for the small

navigation channels. The boats then in use on the Zidaw had a draught of about 1 foot 6 inches, but it seemed probable that boats would increase in size with improved canals: therefore a minimum depth of 3 feet 6 inches and minimum breadth of 25 feet was considered to be desirable. He proposed that a main line of navigable channel should run right through the district, connecting the Panlaung and Myitngè Rivers. It would start at Ingôn near the Natteik Pass, pass Yewun and Kyauksè, and join the Myitngè at Paleik, and would be kept entirely for navigation. Other navigation channels were suggested, but they need not be enumerated as none of them were ever put into effect. The above proposals indicate the importance of navigation both on the Zidaw and other canals at the time of the annexation.

In those days while the Zidaw Canal carried paddy and other produce from Kyauksè to Paleik on the Myitngè, the Panlaung River was no less important, being the principal means of communication between Myittha and Mandalay. Many boats plied upon it, exporting paddy from the lands irrigated by its canal system, and plantains from the special plantain area of the Sama Canal. In the past the great paddy port of the Panlaung was Myingôndaing, of which nothing now remains, save a pagoda, portions of fort walls, and quantities of bricks, to mark the site of its former prosperity, while the plantains of the Sama Tract were loaded at Ywamôngyi.

As regards the Samôn it is hard to believe that it was much navigated in recent times, as it is now a capricious river, generally very shallow, but occasionally coming down in violent flood, which can only be ascended by the smallest boats, except under specially favourable circumstances. It is possible that the volume of water has diminished of late, for Paukmyaing, which stands upon its banks was in the past a town of note, doubtless owing its importance to some extent to boat traffic, and there are even indications that the river was used as a line of advance by the Burmese Kings when invading Lower Burma through Yamèthin District.

At the present day the waterways of Kyauksè are almost deserted. The Zidaw Canal was remodelled, and rendered unfit for navigation by the diversion of its surplus water to the Zawgyi. The latter is no longer choked with silt, as was the case in 1886, but its navigation has not revived and boats are no longer seen upon it above Mekkaya. Boats still ply upon the Panlaung as far up-

stream as Ywamôngyi, where they are used to supplement the railway in the export of plantains, *via* the Myitngè and Irrawaddy. They do not ordinarily ascend above Ywamôngyi though the river is navigable as far as the bridge on the Myittha-Paukmyaing Road. They occasionally ascend the Samôn above its junction with the Panlaung in the rains as far as Dayègaung, if they are specially summoned for a particular purpose, such as loading plantains.

The cause of the great decline in the navigation of the Kyauksè waterways is the railway, which affords cheaper, quicker, and more efficient transport than the shallow draught boats which used to wend their leisurely way along the rivers and the meandering courses of the Zidaw and other canals before they were remodelled and straightened. The use of boats still lingers on the Panlaung only because they are suited for carrying fragile and perishable fruit and vegetables, and breakable pots. A full boatload of plantains on the Panlaung is about the equivalent of five cartloads.

So far, mention of the Myitngè has been omitted, as it is not essentially a Kyauksè River, like the Panlaung, Zawgyi, and Samôn. On the Myitngè there is considerable traffic by boat, and much rafting of teak and of timber and bamboos cut in the Shan States and the Yeyaman hill-tract. It is navigable in its lower reaches for country boats all through the year. Paleik was formerly a busy port, but with the loss of the Zidaw traffic its prosperity has vanished and it is now chiefly remarkable for its rapidly declining population. A small amount of sugar-cane is exported by water from Paleik; at Mekkhaya and Èbya vegetables are sent by boat to Mandalay and there is considerable ferrying activity all along the reach of the river which forms the northern boundary of the district.

Roads.

The roads of Kyauksè District have been constructed since the annexation, taking the place of cart tracks which wandered across of *kwins* and were subject to much flooding. In the original Settlement Report (1890-91) the Settlement Officer drew up a list of roads which he considered essential, and the majority of these had been completed before the Revision Settlement in 1902-03. The Revision Settlement Officer also compiled a list of roads which he believed to be necessary. They were :—

(1) Paleik to Wuntho.
(2) Palambo to Kyaungbangôn.

(3) Dwehla-Kyauksè Road to the Panlaung River *viâ* Puttaing.
(4) Dwehla to Kyauksauk.
(5) Dayègaùng to Paukmyaing.
(6) Tazo to Sabèdaw, *viâ* Myingôndaing.
(7) Hanmyinbo to Thingadôn *viâ* Myindwin.
(8) Thanywa to Yewun.
(9) Thanywa to Bongwin.
(10) Bongwin to Myittha-Yewun Road *viâ* Mônnawgyi.
(11) Kumè Road to Thabyedaung.
(12) Ingôn to Lungyaw.
(13) Maingmaw to Thabyedaung *viâ* Hnangin.
(14) Maingmaw to Nwagu.

Of the fourteen roads suggested above only three have been made, *i.e.* Bongwin to the Myittha-Yewun Road, Thabyedaung to Maingmaw, and Ingôn to Lungyaw. A road has also been made from Palambo to Nyaungywe on the Kyauksè-Kyaungbangôn Road, which may have been intended to take the place of the direct Palambo to Kyaungbangôn Road. If construction of the remainder is ever put into effect, it will greatly increase the efficiency of the communications of the district by linking up existing roads.

At present the principal roads of Kyauksè are designed as feeders to the railway. The area which they serve extends into the Shan hills to the east, and the Meiktila, Myingyan, and Sagaing Districts to the west. On the border of the Shan States they connect with tracts which approach the district through Chaungbat to Pyaukseikpin, from Myogyi along the valley of the Zawgyi River to Taungdaw, from Ye-u to Lungyaw, and through the Natteik Pass to Ingôn. The Pyaukseikpin Track is little used and the Myogyi route, though passable for carts, is also little used because it does not tap a productive hinterland. The track from Ye-u to Lungyaw now carries more traffic than the others, while the Natteik is second in importance. The Myogyi Road alone is passable for carts and only coolies can be used on the Natteik Track. Pack bullocks are the means of transport on the other routes.

On the south-west and west there is good through communication to the adjoining parts of Meiktila, Myingyan, and Sagaing Districts whence heavy cart traffic converges on the Paukmyaing, Dayègaung, Dwehla, and Wunpadè bridges, which cross the Samôn.

The whole Kyauksè Road system is isolated from that of Mandalay District because there is no road-bridge or effective cart ferry crossing the Myitngè River. If the long-anticipated through road from Rangoon to Mandalay is ever constructed, this grave deficiency will probably be removed.

Metalling. The following description of the chief roads of the district is largely based upon notes furnished to a Conference which met at Meiktila in June 1917. The details are substantially correct at the present day.

Out of 84 miles of main roads and 93 of district roads only a few miles in the immediate vicinity of Kyauksè and Myittha Towns are metalled, a low proportion considering that good road metal is available in the district. At Mondaung Hill, close to the Nathlwè Weir, there is a quarry where a felspar prophyry is found in unlimited quantities, which has been described as one of the best road metals in the province. Unfortunately the quarry is situated in an unhealthy spot; also it is ten miles distant from the railway, consequently the cost of carting by contractors is considerable. A similar stone is found at Swe-taung six miles east-south-east of Singaing Station, a better site for a quarry than Mondaung. Kyauksè Hill yields a laminated sandstone, which is used for the roads of Kyauksè civil station, but is better for building purposes. A soft standstone is found at Mogaung, Taungdaw, Ingôn, and Lungyaw along the foot of the Shan hills, and *kankar* exists at Paleik, where it has been used on roads in the neighbourhood, and at Yitkan Village in the south-west of the district.

Where the roads have not been metalled, sanding the surface is practised, with the object of reducing stickiness and improving drainage in wet weather, thereby saving the roads from being cut up by cart wheels to some extent.

Bridges. Owing to the fact that the district is crossed by the Zawgyi, Panlaung, and Samôn Rivers, in addition to the elaborate and extensive irrigation system, an abnormal number of bridges, both major and minor, are required. The majority of these are temporary wooden structures. The bridges on the Singaing to Wunpade and Singaing to Mogaung Roads all are stone, while on the Kyauksè to Kumè, Minzu to Taungdaw, and Maingmaw to Thabyedaung Roads the greater number of wooden bridges have been replaced by stone.

The roads maintained from provincial funds, under charge of the Public Works Department are the following:—

Principal Roads of the District, (i) Provincial Funds.

(1) *Meiktila border to Kyauksè* viâ *Kumè* 22 miles long. This road follows for the greater part of its length an alignment some distance east of the railway. It is important both as a lateral feeder to the railway, and as the chief line of communication for the exchange of produce between the irrigated paddy area of Kyauksè District and the dry crop areas of Meiktila and Myingyan.

(2) *Kyauksè to Dwehla*. 10 miles long, connecting Kyauksè with the Sagaing District at Dwehla, where the Samôn River is bridged, also crossing the Zawgyi and Panlaung. This is an important road, being the main feeder to the railway from the west central part of the Kyauksè District and it also carries heavy through cart traffic from the Sagaing and Myingyan Districts bringing dry crops to the railway and returning with paddy, in the season when the latter is available for export.

(3) *Ingôn-Myittha-Paukmyaing*, 20 miles long. This road leads from the foot of the Natteik Pass at Ingôn to the Samôn bridge at Paukmyaing, crossing the railway at Myittha It brings to the railway both the trade from the Shan country, arriving through the Natteik Pass, which is not of great importance, and a considerable traffic from the unirrigated area of Kyauksè and Myingyan Districts which converges on the Samôn bridge at Paukmyaing by various tracks. This road is about to be extended westwards from Paukmyaing to Yitkan and thence to the border of Myingyan.

(4) *Taungdaw-Minzu-Dayègaung*, 17½ miles long. This road links Taungdaw and Dayègaung with the railway at Minzu Station. The former is the point where the Shan trade route through Myogyi enters the plains along the Zawgyi valley, the latter is a rich village on the Samôn, near the plantain growing area of the Sama Canal, whence there is heavy cart traffic to Minzu. This road will probably be extended across the Samôn into the unirrigated area of the district, towards Ywatha. It crosses the Panlaung at Ywamôngyi by a fine double-tracked bridge, with a central footpath built partly at the expense of U Kyi of Ywamôngyi and partly by Government funds.

(5) *Lungyaw-Myittha*, 11½ miles long, connecting Lungyaw, a point where the most important track from

the Shan States enters the district with Myittha, and carrying heavy local traffic to the railway.

(ii) District Funds. The roads maintained from District Funds under the charge of the Public Works Department are the following:—

(1) ***Singaing-Wunpade***, 7¼ miles long, connecting the railway at Singaing with the bridge over the Samôn at Wunpade, which gives access to a thickly populated region in the Tada-u Township of the Sagaing District. It is much used by carts bringing produce from the Sagaing District to the railway. There is also a branch road, two miles long, from Shwezun to Sawyè, on the Samôn.

(2) ***Singaing-Mogaung***, 4 miles long, connecting the north-eastern portion of the district with the railway.

Both the above have stone bridges throughout their length.

(3) *Paleik-Paleik Railway-Station*, 1 mile long.

(4) *Tarôksu-Sizôn-Paleik Railway-station*, 7½ miles long. This road starts from Tarôksu on the Singaing-Mogaung Road, and crosses the railway before reaching Sizôn. It forms a lateral feeder for the railway line.

(5) *Palambo-Nyaungywe*, 5¾ miles long. This is a cross road between the Singaing-Wunpade Road on the north and the Kyauksè-Dwehla Road on the south, passing through an irrigated area. It is useful both in opening up the west central portion of the district and enabling carts from the Sagaing District to reach places where paddy is obtainable.

(6) *Kyauksè-Bèlin*, 4½ miles long, running parallel to the railway connecting Kyauksè with the important village of Bèlin and acting as a lateral feeder to the railway.

(7) *Kyauksè Ywapale*, 3 miles long.

(8) *Kyauksè-Pyaukseikpin*, 9½ miles long, passing south of the Kyauksè Hill and thence to the foot of the Shan hills at Pyaukseikpin, probably built in early days for strategic purposes. Traffic is now small and this road has fallen into a state of disrepair.

(9) *Myittha-Sabèdaw*, 6 miles long, a cross road running west of the railway and parallel to the Panlaung, linking up the Taungdaw-Mirzu-Dayègaung Road with Myittha. At present the surface is particularly good.

(10) *Lungyaw-Ywakaingyi* 3 miles long, a cross road joining the Lungyaw-Myittha and Ingôn-Myittha Roads.

(11) *Kumè-Maingmaw-Thabyedaung*, 12½ miles long, a loop road on the east side of the railway between Kumè and Thabyedaung both arms of which pass through highly cultivated country and form important feeders to the railway. It gives access to the south-east corner of the district.

The roads maintained from District Funds, but not under the charge of the Public Works Department, are the following:—

(1) *Paleik-Tabetswè*, 6 miles long, running parallel to the left bank of the Myitngé. It is a feeder road to the railway at Paleik Station.

(2) *Dayègaung-Kyauksauk*, 3½ miles long, running parallel to the Samôn. It is a feeder road to the Dayègaung-Minzu main road.

(3) *Ywamôngyi-Kyauksauk*, 4½ miles long, passing through a highly cultivated region and acting as a feeder road to the Dayègaung-Minzu main road, where it crosses the Panlaung.

Village Roads. Village roads are 31 in number. They are so classified for financial reasons and are included in the list of Government roads. Money from the District Fund has been spent on most of them, chiefly for bridging. They are not of great importance, none of them exceeding 3½ miles in length, and are maintained by villagers.

Bridle paths. Bridle paths run along the banks of the canals of the district and their main distributaries Cart traffic is prohibited but they are most useful for ponies, bicycles, and motor bicycles, and are much used by touring officials.

Post and Telegraphs. There is one post office at Kyauksè, a sub-post office at Myittha, and four branch post offices at Paleik, Singaing, Bèlin, and Kumè. Villages in the district are visited periodically by village postmen, but even the largest villages do not enjoy more than two deliveries a week, while the smaller villages only receive their letters at uncertain intervals.

There are telegraph offices at Kyauksè and Myittha, in addition to the railway telegraph. There are no wires in the district except those along the railway line.

Bungalows. The district is exceptionally rich in bungalows, chiefly in charge of the Irrigation branch of the Public Works Department. They are mostly well built, comfortable buildings well connected by roads or bridle-paths, and they make Kyauksè District the easiest of any in Upper Burma for

the touring official. This remark must not however be understood to apply to the Yeyaman Hill-tract, where bungalows do not exist, tracks are bad, distances long and transport depends upon coolies, only obtained with difficulty from the few small and scattered villages.

CHAPTER VIII.

General Administration.

Immediately previous to Annexation; Pacification of the District; Changes in Organisation; Present General Administration; List of Deputy Commissioners; Village Administration; Headmen's Conferences; Police; Military Police; Crime; Public Works Department; Posts and Telegraphs; Land Records; Veterinary Department; Excise.

Immediately previous to Annexation. Immediately before the annexation, the irrigated parts of Kyauksè District, called the *Kokayaing* were under the Pindalè *Wundauk* U Thè who had succeeded the Pagan *Wundauk* U Po in 1254 B.E. (1883). Under the control of the *wundauk* were two officials, called the Ngakayaing and Lekayaing *Wuns*, both resident at Kyauksè whose charges corresponded roughly with the present Kyauksè and Myittha Subdivisions, excluding the dry area west of the Samôn River and the neighbourhood of Paleik. Paukmyaing and the area west of the Samôn were then included in the Ava District, and Paleik with the six villages of Sizôn, Sèywa, Inna, Tabetswè, Tetmyaw and Ywathit, were under a *mvedaing wundauk*, and were included in Mandalay District. The Kyauksè District of Burmese times was divided into the charges of eight *myothugyis*, *i.e.*, Pinlè, Pyinmana, Natmaw, Nyaunghla, Myittha, Myinzaing, Myingôndaing, and Mekkaya.

The duties of these Burman officials are discussed in Chapters IV and X—Irrigation and Revenue Administration.

Pacification of the District. The following description of the pacification of Kyauksè District is based on the information contained in the Gazetteer of Upper Burma and the Shan States, Part I, Volume I, Chapter IV, supplemented by the reminiscences of local Burmans who took part in the operations. Unfortunately it was not found possible to obtain an account from any British officer who had served in the district immediately after the annexation.

The occupation of Mandalay by the invading British force took place on 28th November 1885. As Kyauksè was not on the lines of advance, it does not appear to have attracted attention till January 1886 when Messrs. Walker, Calogreedy, and Herbert, who had previously been employed in the forests, and Mr. Grey of the Bombay Burma Trading Corporation, determined to return to their work. Apparently believing that the country was safe, they set out from Mandalay and entered Kyauksè District, where they were attacked in the neighbourhood of Tarôksu, a short distance east of Singaing, and after four hours resistance were killed, with the exception of Mr. Grey, who was taken prisoner and carried off to the camp of the Myinzaing prince at Zibingyi, east of Mandalay, where his body was found on January 10th, 1886.

Immediately previous to Annexation.

This Myinzaing prince was a son of King Mindôn and the Letpanzin queen, who had escaped massacre by King Thibaw partly because of his youth and partly because, being a son of one of the minor queens, he was inconspicuous and easily hidden away by his friends. At the time of the annexation he was 17 years of age. He was no doubt led into opposition to the British Government by certain influential officials of the late Burmese Government, of whom perhaps the most prominent was the *Anauk Windawhmu*, U Paung. He was driven out of his first position at Zibingyi in January 1886, and fled to Ywakainggyi in Kyauksè District where he established himself in the house of the *Sèsaye* U O. He then proceeded to build himself a town east of Ywakainggyi Village, and called the Shan *sawbwas* and the *myothugyis* to his standard. None of the *sawbwas* obeyed his summons, but the *sitkègyi* (or Lieutenant-Governor) of the Southern Shan States, the *Anauk Windawhmu*, U Paung, and various *thugyis* came to join him. The *sitkègyi* was stationed as Yewun, while the prince himself remained at Ywakainggyn. An outpost was established by them at Thamandalin, five miles south of Kyauksè on the Yewun Road. The prince then appears to have made an attempt to develop some kind of administration, for he appointed one Min Po to be *wun* of the three *myos* of Pindalè, Taungtha, and Nyaungôk, Myat Hmon (later the defender of Hmaw Aing on the Meiktila border) to be *wun* of Kyauksè, and Bo Saing to be *shwepyiyanaung Myindatbo*. Meanwhile in February 1886 a military post had been established at Kyauksè and in March Mr. H. R. Pilcher came from Ava to take chage

of the district, where he remained till his death in the following October. After communications with Mandalay had been secured by posts at Tarôksu and Paleiko, perations were undertaken against the Myinzaing prince and by July 1886 he had been driven from the neighbourhood of Ywakainggyi to Ywanan as the result of several skirmishes. The following account of these engagements was given by Bo Kaing of Inyaung Village, formerly a follower of the Myinzaing prince, now a leading co-operator in the district :—

"In 1247 B.E. I took service with the Myinzaing prince, son of King Mindôn and the Letpanzin queen. I brought 500 men to join his force. First of all, between Hanmyinbo (8 miles south east of Kyauksè and 12 miles north-west of Ywakainggyi) and Ze Villages, we had a fight between over 300 British troops and over 500 Burmans. Sixteen of the Burmans were killed and the British had about seven casualties. Our Burmese troops retreated. On the second occasion over 500 Burmans had another fight east of Hanmyinbo in Ze Village. Two of the Burmans were killed and the rest retired. On the third occasion, 3,000 Burmans and 1,000 Shans had a fight with over 300 British at Milungôn, Yewun Village (three and a half miles south of Hanmyinbo), which lasted all day. Over 30 Burmans and Shans were killed. Then the Myinzaing prince with over 5,000 men encamped at Ywanan. After that there was a fourth engagement north of Hanmyinbo where out of 300 British troops engaged I saw that about 60 were killed. After that Bo Myat Hmon, Bo Chin, and myself with over 6,000 men surrounded Kyauksè, and attacked it. Many Shans and Burmans were killed, and I was wounded by a bullet in the side. We had to retire to Yebit Village and Minzu fell into the hands of the British. Next there was very heavy fighting, lasting two days, at the Shwebôntha Pagoda, at Kumè Village, where many Shans and Burmans were killed. Finally there was a fight at Letpanzin Village. There were no casualties but we had to retire.

"After I had taken part in about seven fights, I entered the service of the British Government, and accompanied their troops towards Sagaing, and pursued the forces of Bokdayaza on the borders of the *Kokayaing*."

Bo Kaing's figures are plainly exaggerated in some instances, particularly when he speaks of 60 British ranks being killed. The existence of 17 graves in the

cemetery at Yewun shows, however, that the Burmans were not dislodged without loss to our troops. In one engagement, almost certainly that at Shwebôntha Pagoda, Kumè Village, Captain Wilbraham and a lance-corporal of the Somerset Light Infantry were killed and seven men were wounded on 23rd June 1886.

In August 1886 the Myinzaing prince died of fever at Ywanan and his following broke up. The fact that he was a legitimate member of the royal family made him an important potential cause of disaffection, and various dacoit leaders had been professing to fight in his interests.

The events following upon the prince's death are described by Maung Myo, headman of Thalun Village, as follows:—

"After the prince's death, the *myoza* of Ywanan plotted against the rebel *bos* and they immediately killed him. Then the two sisters of the prince and his follower, the ex-*Anauk Windawhmu*, U Paung, went to Myogyi, the capital of Baw State. Maung Myo reported this to the Deputy Commissioner (Mr. Pilcher) and the *myoza* was called upon to expel them. He did expel U Paung, who went to the Yeyaman to join the Setkya *Mintha* but he kept the two sisters of the prince, and, as is mentioned below, an attempt was made to arrange their marriage with the Setkya *Mintha*.

Other *bos* who had served under the Myinzaing prince including Myat Hmon, Min Po, and Bo Saing, established themselves at Hmaw Aing, a remote ravine on the southern slopes of Pyetkaywe Hill in Meiktila District, difficult of access and frequently used as a refuge in earlier times of disturbance. Myat Hmon, who was originally a villager of . . . took command of this force, which at one period amounted to some 3,000 men. He came in once in 1887 and made his submission and then returned to his band, who were well armed and had a strong position at Hmaw Aing, whence they raided Thabyedaung, Kumè and all the villages along the Nathlwè Canal, causing such alarm that this part of the district was abandoned by its inhabitants and became depopulated. A detachment of Indian troops, believed to have belonged to the 27th Punjab Infantry, was stationed in a post at Thabyedaung, on the site of the present bungalow, and co-operating with forces from Wundwin, in Meiktila District, it proceeded to break up the Hmaw Aing concentration. Three attacks appear to have been necessary before Myat Hmon's party

was finally scattered. In the last engagement, which took place in 1888, Bo Saing was killed. Then Myat Hmon came in and made his submission for the second time, and was allowed to live in his village till his death, while Min Po fled to Myingyan, where he is believed to have made his submission shortly afterwards.

Such is the outline of the operations which, lasting from January 1886 till 1888, led to the final suppression of the forces originally collected by the Myinzaing prince and to the pacification of the centre and south of the district. During the latter part of this period, the Setkya *Mintha* and Bo Kyaw Zaw were the cause of much trouble in the Yeyaman Hill-tract and along the eastern borders of the district.

According to the statement of Bo Thaw Da of Yaman, the Setkya *Mintha* first appeared in the Yeyaman Hill-tract, dressed as a *koyin* in the yellow robe. When Bo Thaw Da questioned him, he said that he had come from Alôn and Kanba in Shwebo District, and that he wanted to join the Zibin *Mintha*, by which he meant the Myinzaing *Mintha*. Bo Thaw Da then told him that the Zibin *Mintha* was at Inlè, to which place there was no road from Yeyaman. The *koyin* then went off to some villages in the Maymyo Subdivision, where he spread the rumour that he was the son of the Setkya *Min's* sister and said that he was the possessor of a *hlanbyan* or magic spear. Some of the Shan and Danu inhabitants of the villages believed his story, and he raised about 150 men, with whom he occupied the Myinbyu Taung in Baw State. There he was attacked by a British force, and forced to flee to Yeyaman, whence he began to raid the Myogyi neighbourhood. He was then joined by U Paung, the *Anauk Windawhmu*, who had been one of the Myinzaing prince's *bos* till the death of that leader in August 1886. U Paung summoned the Setkya *Mintha* to Myogyi to marry him to the sisters of the Myinzaing prince who were still living there after the death of their brother. Lieutenant Green, Deputy Commissioner of Kyauksè from June 1887 to September 1887, got information of the *Mintha's* presence at Myogyi, and proceeded to attack him with inadequate forces. Lieutenant Green found himself surrounded by the dacoits. The *nè-shin* of Myogyi, who was *Ahmudangaung Ngwedayamin Bo* On Gaing, went to the British post at Myittha and reported the situation. *Bo* On Gaing then guided a force of 30 British troops up from Myittha to Myogyi, where

they attacked the Setkya *Mintha* and forced him to retreat to the Yeyaman Hill-tract. Here he was again attacked by British forces and U Paung was taken prisoner, together with 12 elephants, the property of the Bombay-Burma Trading Corporation, and four Burman flags.

Bo Kyaw Zaw now appeared on the scene and joined the Setkya *Mintha*. This *Bo* Kyaw Zaw was a native of of Sunyè Village, where he was originally a hunter and later a dacoit leader in the reign of King Thibaw. After the annexation he lay low in the jungle along the Myitngè River till he joined the Setkya *Mintha*, when combining their forces, which numbered in all 300 men, they took up a position about eight miles east of the Sunyè Tank on the Sudaung Hill. From the Sudaung Hill *Bo* Kyaw Zaw led a raiding party against Yèbaw Village where he killed the *sègyi* Maung Nyun with whom he had a dispute about a *da* and exacted supplies from the inhabitants. Similar raids were made on Pyaukseikpin and Bèlin. At the latter village, while the raid was in progress, the dacoits, who numbered about 100, were surrounded by Indian troops and two sepoys were killed by *Bo* Kyaw Zaw's father, who was then taken prisoner and afterwards executed. U Pi, a nephew of Kyaw Zaw and retired *thugyi* of Sunyè Village, states that he was at this period sent as an emissary to the Sudaung Hill to persuade the *bos* to make their submission. On his arrival the Setkya *Mintha* became alarmed and crept away during the night. U Hpi was unable to persuade the dacoits to surrender and he returned to the British camp which was situated at a spring in the Yeyaman Hill called Yenyeinhnokthi. Then a force of 300 British troops, and 100 men supplied by *Bo* On Gaing of Myogyi surrounded Sudaung Hill and attacked it at dawn, capturing the position after two hours' resistance. The Setkya *Mintha* and *Bo* Kyaw Zaw fled to Lawksawk State, where the latter and his wife were captured by the Kyaukku Headman, and sent as prisoners by the Lawksawk *Sawbwa* to Kyauksè. At Kyauksè, the Setkya *Mintha*, who is said to have gone mad, was tried, and after it had been proved that he was no prince but an impostor he was executed. He was also known as the Zibin *Mintha* and the Sudaung *Mintha*, from the places at which he had his camps, and the Teinbyan *Mintha* on account of suffering from cataract.

After the Setkya *Mintha's* death, *Bo* Kyaw Zaw remained hiding in the Yeyaman Hill-tract along the banks

of the Myitngè, but was no longer aggressive. Eventually in 1889 U Pi succeeded in persuading him to make his submission. There was some doubt as to the terms on which he had come in, and while he was discussing the matter with Mr. George, the Subdivisional Officer, Kyauksè, the latter called for a guard to take the *bo* as a prisoner to Mandalay. Kyaw Zaw, suspecting that this would lead to his execution, jumped up and bolted and has never been heard of since. His disappearance completed the pacification of the Yeyaman Hill-tract and the eastern borders of the district.

The western side of the district had also been disturbed, partly by bands from the Sagaing District. The chief of these bands was that led by Chaunggwa *Minthas*, called the *Teiktinyannaing* and the ***Teiktinyanbain***, sons of the Mekkaya *Myoza* ***Mintha*** and a concubine, and grandsons of King Mindôn. They had their headquarters at Chaunggwa, and included a number of Kyauksè men among their considerable following, estimated at as much as 5,000 men. Once at least they raided Kyauksè District, going to Panan Village and forcibly enlisting the headman and some of the villagers The Chaunggwa camp was broken up by a combined movement from the Kyauksè and Ava sides, in which detachments of troops from Kyauksè and Myittha posts and 500 Burmans under the Paukmyaing Myoôk, Maung Mi Kin, are said to have taken part. On the capture of their camp at Chaunggwa the ***Minthas*** fled to Natogyi, and troubled this district no longer.

Shwe Yan was another Sagaing *bo* who operated along the Samôn but he does not appear to have raided Kyauksè District to any important extent. Two British officers were killed in fighting with his party and were buried at Myotha in Sagaing District.

The Sedo ***Mintha***, so called because he tattooed his followers with magic marks on their wrists, also known as the Maung ***Mintha*** and the Yanaung ***Mintha***, was a person of unknown origin who pretended to be a prince and collected followers at Dandaing, north-west of Kyauksauk, on the western borders of the district. His party was dispersed after one skirmish, and he was heard of no more.

Maung Po Kyi, believed to have come from Mandalay, collected a small force at Thanbayakyan, near Dwehla, and called himself the Thanbayakyan ***Mintha***. His party broke up as soon as it was threatened with attack.

It is difficult to form an accurate estimate of the casualities suffered by the British forces in the operations in Kyauksè. In addition to the 17 graves at Yewun, there are 24 in the Kyauksè cemetery, which are believed to be those of soldiers, British and Indian, who died or were killed during the pacification. Unfortunately only one inscription remains, on the grave of Private O'Brien of the Hampshire Regiment.

Changes in Organisation. On the British occupation six townships were constituted in the Myittha Subdivision, *viz.* Myittha, Kumè, Sawhla, Myingôndaing, Pinlè, and Paukmyaing. In 1888-89 they were reduced to three, Myittha, Sawhla (with headquarters at Lungyaw) and Paukmyaing (with headquarters at Dayègaung). In 1893 the Sawhla Township was amalgamated with Myittha, and later the Paukmyaing Township was also absorbed, the Myittha Township becoming coextensive with the subdivision. The Kyauksè Subdivision was originally divided into Mekkaya and Myinzaing Townships, the headquarters of both being in Kyauksè Town, half of which was in one township and half in the other, the Zawgyi River being the dividing line. In 1889 the two townships were reconstructed and their headquarters fixed at Singaing and Minzu, from which they took their names. In 1896 the headquarters of the Minzu Township were removed to Kyauksè, and since then it has been known as the Kyauksè Township.

Present General Administration. The district now consists of the Myittha Subdivision and township, with an area of 243 square miles and the Kyauksè Subdivision which comprises the Kyauksè Township area 180 square miles, the Singaing township, area 140 square miles, and the Yeyaman Hill-tract, area 711 square miles.

The district is under the general supervision of the Commissioner of the Meiktila Division, resident at Meiktila, and is in charge of a Deputy Commissioner who is also Collector and District Judge. At the district headquarters is an officer who performs the combined duties of Headquarters Magistrate and Treasury Officer and also an *Akunwun.* Each subdivision is in charge of a Subdivisional Officer and each township in charge of a Township Officer who carry out the duties of Subdivisional Magistrate and Judge and Township Magistrate and Judge respectively. There is also an Additional Township Judge for Kyauksè and Myittha. The Yeyaman Hill-tract is in charge of a *Myothugyi* who is a Sixth Grade Myoôk, with third class magisterial powers, living at Yèywa on the Myitngè River. There are four Honorary Magistrates at Kyauksè.

List of Deputy Commissioners.

List of Deputy Commissioners, Kyauksè District.

Name.	From what date.	To what date.
R. H. Pilcher ...	1-12-1885	24-10-1886
D. J. Campbell	1-11-1886	23-6-1887
Lieutenant G. Green	24-6-1887	26-9-1887
D. J. Campbell	27-9-1887	3-11-1888
Major B. Parrott	4-11-1888	20-11-1889
Major C. Adamson	21-11-1889	19-1-1890
Captain T. Johnson	20-1-1890	4-12-1890
A. R. Bonus	5-12-1890	17-6-1891
Lieutenant H. Warde ...	18-6-1891	6-8-1891
D. Ross	7-8-1891	28-12-1891
Captain Strickland	29-12-1891	11-7-1894
R. Grant Brown	12-7-1894	15-10-1894
Captain Strickland	16-10-1894	14-2-1899
D. Twomey	15-2-1899	12-4-1900
G. F. Arnold	13-4-1920	27-7-1900
E. N. Drury	28-7-1900	19-11-1900
Captain Cronin	20-11-1900	11-7-1901
C. S. Pennell	12-7-1901	8-9-1901
Major Aplin ...	9-9-1901	3-7-1904
A. Gaitskell	4-7-1904	10-10-1906
C. Wilkinson	11-10-1906	18-11-1906
Major Abbey	19-11-1906	1-7-1907
Major Williams	2-7-1907	23-8-1907

List of Deputy Commissioners. Kyauskè District—concld.

Name.	From what date.	To what date.
C. S. Pennell	24-8-1907	14-12-1907
Major Warde	15-12-1907	16-3-1909
Major Abbey	17-3-1909	17-10-1910
Major Bazett	18-10-1910	12-11-1910
Colonel Cronin	13-11-1910	15-3-1914
E. H. Jones	16-3-1914	27-10-1914
R. Grant Brown	28-10-1914	3-1-1915
H. Tonkinson	4-1-1915	22-1-1915
R. Grant Brown	23-1-1915	2-9-1915
J. J. Anderson	3-9-1915	5-4-1917
U Kyaw U	6-4-1917	14-4-1917
J. L. McCallum	15-4-1917	27-6-1917
J. S. Saunders	28-6-1917	14-8-1917
J. L. McCallum	15-8-1917	7-8-1918
W. H. L. Cabell	8-8-1918	15-2-1919
W. J. Smyth	16-2-1919	25-4-1920
H. F. Searle	26-4-1920	24-5-1920
W. J. Smyth	25-5-1920	21-3-1921
R. Neild	22-3-1921	3-4-1921
Major T. D. H. Hackett ...	4-4-1921	4-7-1921
R. Neild	5-7-1921	15-7-1921
Major G. C. Slacke	16-7-1921	

Village Administration.

The district now contains 280 headmen as compared with 335 in 1911, 324 in 1903, and 338 in 1891. This heavy reduction in number is due to the policy of abolishing small headman's charges as they fall vacant and amalgamating them with adjacent charges, with the object of giving the position of headman an income sufficient to attract good candidates and to furnish an adequate remuneration for their work. The hereditary principle is followed as far as possible when filling up vacancies, but there are now a fair number of headmen who have been imported from other villages, owing to difficulties in finding within the village suitable candidates for the appointment. *Myothugyis* no longer exist in the district with the exception of the

Singaing and Myittha headmen who still retain the title by way of courtesy. Among the headmen of the district 56 hold both special Criminal and special Civil powers, 5 hold special Criminal powers only and 20 hold special Civil powers only.

Head-men's Conferences.

A notable feature of the village administration is the system of headmen's conferences which was introduced by Mr. J. L. McCallum, I.C.S., in 1917.

The district is divided into 22 groups, each consisting of about 10 village-tracts, the headmen of which meet monthly at the residence of each in turn. The groups elect their own first, second, and third Presidents whose term of office tends to be permanent. The object of having three presidents is to enable two or more office-bearers to be deputed for the purpose of any local enquiry.

The primary function of the groups is to secure co-operation in the maintenance of order. Any member who is inefficient is warned and finally reported with a view to his replacement. The work includes surveillance of bad characters and suspicious strangers, maintenance of fences and *kins*, drills in Snadden's system of defence and the prevention of offences both under the Indian Penal Code and under the Excise, Opium and Gambling Acts.

The secondary duties include promotion of sanitation, education, better communications, better general administration, agricultural improvements, irrigation, co-operation, and all subjects which interest and affect the lives of the inhabitants of the groups.

The groups have no actual powers (except that of licensing *pwès* within their areas), but indirectly they exercise very considerable authority, owing to mutual support among the members : to the influence of the leading headmen over their fellows, and to being in close touch with, and receiving strong support from, the Deputy Commissioner.

As regards the results of the system, groups in different localities have different characteristics, but generally more interest has been shown and better results achieved in the secondary functions than in the primary.

Among the tangible results may be mentioned an improvement in the maintenance of village fences and *kins*, provision of village schools where required, construction and maintenance of village roads, and useful advice and information on matters relating to irrigation, communications,

the state of crops, the price of foodstuffs, and in fact almost every matter which affects the rural population. It is remarkable that without powers and without funds the groups should have been able to accomplish so much.

There have been no district conferences except a meeting in 1918 of the first Presidents of groups at which the Deputy Commissioner was present and matters relating to the War Loan and a few village matters were discussed.

Police. The police are in charge of a District Superintendent of Police, assisted by a Deputy Superintendent.

Police-stations and outposts are as follows:—

Subdivision. (1)	Township. (2)	Circle. (3)	Police-stations or Outposts. (4)	Remarks. (5)
Kyauksè ...	Kyauksè	Kyauksè	Kyauksè P.S. (A). Dwehla O.P. Minzu P.S. Thanywa O.P.	
	Singaing ·	Kyauksè	Singaing P.S. (A) Paleik, II Class P.S.	
Myittha ...	Myittha	Myittha	Myittha P.S. (A). Kumè P.S. Dayègaung P.S. Ywakainggyi.	

(A) Headquarters of townships. No Military Police are stationed at any post.

The following table shows

Distribution. (1)	Inspectors. (2)	Sub-Inspectors. (3)	European Sergeants. (4)	Head Constables. (5)	Constables. (6)
			DISTRICT	STAFF	
Circle and Town Inspectors ...	2	...	...	...	...
Prosecutors	1	1	...	...	...
Depôt Staff	...	1	...	1	...
Readers	...	2	...	...	...
Escorts	...	...	...	1	8
Buglers	...	...	...		1
Orderlies	...	...	...	...	12
Menials	...	...	...	...	...
(i) Total District Staff and Headquarters Lines.	3	4	...	2	21
Kyauksè Circle.		STATIONS AND	OUTPOSTS		
At Kyauksè, P.S.D. ...	...	2	...	7	29
At Dwehla, O.P.I.	...	...	...	1	5
At Singaing, P.S.D. ...	...	1	...	4	16
At Paleik, II Class, P.S.D. ...	...	...	...	2	9
At Minzu, P.S.D.	...	1	...	3	8
At Thanywa, O.P.D. ...	...	...	...	1	6
Myittha Circle.					
Myittha, P.S.D.	...	1	...	6	23
Kumè, P.S.D.	...	1	...	3	14
Ywakainggyi, P.S.D. ...	...	1	...	4	8
Dayegaung, P.S.D. ...	...	1	...	3	8
(ii) Total at posts ...	...	8	...	34	126
(iii) Total for duty [totals of (i) and (ii)].	3	12	...	36	147
Trained men in Depôt ...	...	...	...		...
Recruits	...	...	...		..
(iv) Total for Depôt ...	...	...	...	...	...
(v) Reserve for sick and on leave and training.	...	2	...	...	27
GRAND TOTAL ...	3	14	...	36	174

distribution and strength :—

Total of all ranks excluding Inspectors. (7)	Mounted men (included in column 6). (8)	Menials. (9) Peons.	Menials. (9) Watermen.	Number of firearms. (10) Sanctioned.	Number of firearms. (10) Proposed.	Number of Indians (11) Sanctioned.	Number of Indians (11) Proposed.	Military Police sanctioned for district. (12)
AND HEADQUARTERS LINES.								
...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...
9	..	...	...	...	...	...	...	...
1	...	...	...	...	...	...	...	...
12	...	...	...	...	...	...	...	...
...	...	2	...	...	...	...	...	...
27	1	2	...	25	...	...	...	50
(INCLUDING THOSE AT HEADQUARTERS OF DISTRICT).								
38	5	...	...	13	...	4	...	...
6	...	...	...	...	...	...	...	...
21	2	...	...	...	...	...	...	...
11	...	...	...	...	...	...	...	...
12	1	...	...	...	...	...	...	...
7	1	...	...	...	...	...	...	...
30	3	...	...	16	...	...	...	...
18	2	...	...	...	...	...	.	...
13	1	...	...	...	...	...	...	
12	1	...	...	...	...	...	...	...
168	16	...	...	29	...	4	...	...
195	17	2	...	54	...	4	...	50
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
29	...	...	...	...	...	..	...	...
224	17	2	...	54	...	4	...	50

Military Police. There is one Military Police post at Kyauksè furnished by the Mandalay Battalion. Its strength is one Indian Officer and seventy-five Non-Commissioned Officers and Sepoys. The post which formerly existed at Myittha has been abolished.

Ordinarily there are no Mounted Military Police in the district, but mounted patrols are specially introduced when the *kaukkyi* paddy crop is being harvested and is lying in great quantities on the threshing floors awaiting export. It is considered that this grain and the large sums of money which are circulating in the district in the months of January, February and March are inducements to crime, which have to be counteracted by the presence of additional guardians of the law.

Crime. The following list shows the true cognizable cases of all kinds which have occurred in the district during the past 13 years:—

Years. (1)	All kinds of true cognizable cases. (2)	All cases of violent crimes. (3)	Dacoity. (4)	Cattle theft. (5)	Remarks. (6)
1909 ...	329	6	2	14	
1910 ...	325	4	...	10	
1911 ...	366	12	...	14	
1912 ...	398	6	...	21	
1913 ...	363	10	...	31	
1914 ...	320	14	1	25	
1915 ...	289	16	3	21	
1916 ...	369	12	3	24	
1917 ...	403	12	3	22	
1918 ...	398	22	7	11	
1919 ..	471	22	7	16	
1920 ...	499	11	3	21	

Public Works Department. The canal administration is under the charge of the Executive Engineer, Mandalay Canal Division, resident in Mandalay. He is assisted by two Subdivisional Officers stationed at Kyauksè and Myittha. There are four Canal Inspectors in the Kyauksè Canal Subdivision and three in the Myittha Canal Subdivision.

Roads and buildings are under the charge of the Executive Engineer, Meiktila Division, who is assisted by a Subdivisional Officer stationed at Kyauksè.

The forests of the Kyauksè District, including the Yeyaman Hill-Tract, are under the charge of the Divisional Forest Officer, Meiktila, who is assisted by a Forest Ranger stationed at Kyauksè. **Forest Department.**

Post Offices are under the charge of the Superintendent of Post Offices, Eastern Division, Meiktila. There are Sub-Post Offices at Myittha and Kyauksè and Branch Post Offices at Paleik, Singaing, Bèlin, Minzu and Kumè. Telegraphs are under the charge of the Superintending Telegraph Engineer, Maymyo. There are only two Telegraph Offices in the district, at Kyauksè and Myittha, excluding the Railway Station Offices of the Railway Telegraph system. **Posts and Telegraphs.**

The staff of the Land Records Department consists of one Superintendent of Land Records, six Inspectors and forty-eight Surveyors. **Land Records.**

There are three Veterinary Assistants. **Veterinary Department.**

Excise is under the charge of the Superintendent of Excise, Meiktila. **Excise.**

CHAPTER IX.

REVENUE ADMINISTRATION.

A. Pre-Annexation:—Tenures in 1791 A.D.; Assessment in 1791 A.D.; Area under cultivation in 1791 A.D.; Inquest of 1802 A.D.; Inquest of 1877 A.D.; Resumption of service lands; Subsequent developments; Tenures prior to Annexation; Cultivated area and revenue before Annexation; Incidence and system of assessment; Incidence 1791 A.D. and 1881 A.D.; Yegun, Thathameda, Frontier Customs Duty, other sources of revenue.

B. Post-Annexation; Rates of Land Revenue. The Original Settlement 1890-91. Period between Settlements. First Revision Settlement 1902-03. Second Revision Settlement. Other sources of revenue, Bazaars, Ferries, Grants, Leases, Fisheries.

A. Pre-Annexation.

In 1791 A.D. the Kyauksè *wun*, Ne-myo-maha-thin-gyan reported that there were the following categories of land in the irrigated area *:—

(1) *Ne-mye-lok-mye*—Service land.

(2) *Kyaung paya wut-mye*—Religious land

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* *Kokayaing Thamaing*, pages 58, seqq.

(3) Land held by officials as part of the emoluments of office.

(4) Royal estates worked by the King's labourers, *Lamaings*.

(5) *Letyongaung twin-mye*—Land brought under cultivation by the occupier, *i.e.* squatters' land.

(6) *Amwezet amwegan*—Ancestral land.

1. *Ne-mya-lok-mye*, service land, was granted to soldiers and other *ahmudans* (such as actors) on a service tenure in lieu of pay, and was worked by them when not on service or on duty at the capital, or by their tenants. Many of these *ahmudans* were prisoners of war from Lower Burma, Arakan, the Shan States, and Siam and their descendants. The land granted to them is also known as *ahmudansa*. The Settlement Officer identified eighteen different units which held service land in the Kyauksè District. The names were :

(1) Shewin, (2) Letyawin, (3) Letwèwin, (4) Naukwin, (5) Sulèzedaing, (6) Winkaunghan, (7) Myaukdawè, (8) Natsu-letwè, (9) Natsuletya, (10) Yweletwè, (11) Yweletya, (12) Le-twègyaung, (13) Letyagyaung, (14) Linzin, (15) Kathè-ekkabat, (16) Shanmyin, (17) Myinsugyi, (18) Gyun.

The lands of these units were by no means confined to the *Kokayaing* but were to be found in several other districts of Upper Burma. The size of *ahmudansa* holdings depended on the rank of the occupier. It is recorded that in 1783 A.D. a palace guard had 5 *pè* of land, an *awhan* 7½ *pé* and a *daing daung* 10 *pè*.* In theory the *pè* was 1¾ acres, but in practice it was an elastic unit of measurement probably depending to some extent on the favour of the *sègyi*, who was responsible for the distribution of service land. When the district was brought under survey some alleged *pè* were found to amount to as much as 5 acres.† The most important obligation attached to *ahmudansa* land was service and in times of peace this had to be performed principally at the capital. Only a portion of each unit was on duty at any one time and the remainder could stay on their holdings. Duty was taken in turns so that a man had to be away from his cultivation for some part of the year. This difficulty was overcome by amicable arrangements between relations or friends who were members of the same units whereby as each of them was

* B.E. 1145 *sittan* of Asemaso Village.

† L.R.A. Report, 1893-94, page 64.

absent on duty in turn the remainder looked after his land for him and gave him a share of the produce on his return.

2. *Kyaungpaya wutmye*, religious land. The Settlement Officer states that these lands had been permanently alienated by the Burmese kings for the purpose of keeping pagodas and sacred edifices in repair. A number of persons were made slaves of the pagoda, themselves and their descendants for all time ; they were given a certain area of land for their support and in return they were expected to make annual repairs to the pagoda in their charge. At Original Settlement the only religious lands still recognized were those attached to the Shwethalayaung Pagoda, on Kyauksè Hill, with an area of 180 acres. The dedication of religious lands, with the boundaries and the names of the slaves, was usually inscribed on stone and set up in the neighbourhood of the pagoda. Many of these inscriptions, either originals or copies, have survived, and there is reason to belive that others which previously existed have been destroyed by persons anxious to remove evidence of the religious tenure of their lands or of the servile status of their ancestors.

3. Lands held by officials as part of the emoluments of their office. Under this category are included lands held by members of the Royal Family. No records have been found to show the area of these lands prior to the Annexation. At Original Settlement the Kani *Minthami* was found to hold 260 acres, the Taungzaungdaw *Mibaya* 178 acres and *zatsaya* Maung Po 47 acres.

4. Royal estates worked by the king's labourers, *lamaings*. These fell into two classes: (*a*) land worked with cattle and seed provided by the king ; (*b*) land worked with cattle and seed provided by the labourers themselves. *Lamaing* land tended to disappear. *Lamaing* service was sometimes converted into military service ; seed and bullocks would fail to be provided by the kings; and any arrangements possible were made for getting the land worked.

5. *Letyongaung twinmye*, Squatters' land. It is possible that in 1791 A.D. the squatters who cleared waste land acquired an hereditable right in it; but in King Mindôn's time it was no longer possible to acquire such a lien, because all cleared land went on to the register of *pèdaw*. *

6. Ancestral land, *amwezet amwegan*.

* Statement of U Ba, *ex-Myothugyi* of Myinzaing.

Assessment in 1791 A.D.

In 1791 A.D. land of the first three classes paid no revenue except a *viss* of lead (value four annas) and one anna *per pè* writer's fee and one *pyi* of rice. Occupiers of such land however had to provide labour and materials for the maintenance of the weirs and canals according to custom and as directed. *Lamaings* had no duties in connection with the canals. Those who worked with the king's cattle and seed grain had their cultivated area measured yearly by the *Lamaing* clerks and paid an average of 25 baskets *per pè* to the royal granaries. The rate paid by *Lamaings* working with their own seed and cattle is not stated. On fallowed land nothing was paid. Squatters' land and ancestral land paid *Yegun* at the rate of two baskets of paddy *per pè* (and 1 anna *per pè* clerk's fee). The occupiers were liable equally with those of service land for supply of labour and materials for maintenance of weirs and canals. Certain lands were required to bear the cost of offerings to the *nats* and of maintenance of the *wun* and his following when on tour.*

Area under culitivation in 1791 A.D.

The *wun* reports neither the area of land under each category nor the total area. But from another manuscript † an approximate estimate can be made. In 1784 A.D. the total area was 68,266 *pè*. In 1802 A.D. it was 60,000. So that in 1791 A.D. the date of the *wun's* report there were probably about 65,000 *pè* of cultivated land. It is notable that in the *wun's* account there is no mention of land by the names *bobabaing*, *damaugya* or *ayadaw* which became so familiar in the course of early post-Annexation discussions.

Inquest of 1802 A.D.

At the 1164 B.E.Inquest the *myothugyi* of Myinzaing reported that the areas irrigated from the Ngapyaung Thindwè and Minyè weirs, and lying within his charge, contained "royal irrigated land granted to *asu ahmudans*," *i.e.* service land and "private citizens' ancestral land—*sin yè tha boba-damaugya* paying *yegun*." On the latter he collected for each *pè* 3¾ baskets for the main tax (*khunma*), *i.e.*, the *yegun* and 5 annas writer's fee. ‡ At the 1239 B.E.Inquest the *myothugyi* reported the existence of the same kinds of land but mentions the collection of *thathameda* as well as of *Yegun* and *ye-bo*, among his duties. ‡

Inquest of 1877 A.D.

* *Kokavaing Thamaing*, page 36.

† Copy in the possession of U Ba Thein, author of *Kokayaing Thamaing*.

‡ Myinzaing *sittans* for 1164 and 1239 B.E.

In 1872 all service lands throughout Burma were resumed and monthly pay in cash substituted but "practically they remained either in the hands of the original *ahmudans'* representatives or of the first occupant *lókyinswè* who took possession." * In Kyauksè it is stated that an option was given to soldiers on duty at the capital to draw pay at the rate of Rs. 10 a month instead of relying on rents collected for them, but that very few availed themselves of the option till the time of King Thibaw.

Resumption of Service Lands.

Land and titles were subject to various other vicissitudes. There were the following tendencies :—

Subsequent Development.

(1) Officials invested their savings in the purchase of squatter and ancestral land. Their lands were frequently confiscated for misconduct and become *theinzu* or confiscated land for which a separate register was maintained by Government.

(2) The soldiers were constantly on the alert and if they discovered any better land than that which they held, they petitioned the King through their Officer Commanding and effected an exchange. †

(3) A certain amount of service land was illegally sold and mortgaged. This was particularly the case with land held by the Linzin infantry regiment. ‡ As far as can be ascertained at this distance of time the Linzin infantry title did not differ legally from any other service title but this regiment was the King's most trusted bodyguard and was treated with special indulgence. About 1874 the Thanywa detachment of the Linzins mortgaged their lands to U To, a very rich man of that place, and petitioned the King for monthly pay. The King redeemed their land for them at his own cost. There were probably other sales and mortgages and the local tradition is that revenue officials hesitated to interfere with the dealings in land of members of this crack corps. In practice, therefore, though not in law, a *bobabaing* title could be acquired from a Linzin soldier. In 1888, however, the Deputy Commissioner passed an order that Linzin service lands were to be treated like any other state lands. §

(4) Religious land was also illegally sold. The difficulty of proscribing such sales may be gauged from the fact that the Shwethalayaung Pagoda land decreased from

* Upper Burma Gazetteer, Part I, Volume II, page 438.

† Statement of U Ba, ex-*Myothugyi* of Myinzaing.

‡ O.S.R., page 26. The Linzin detachments at Sunyè and Thanywa were infantry. There were Linzin boatmen elsewhere.

§ O.S.R., page 25.

180 acres at original settlement to 71 acres at the First Revision Settlement. The pagoda slaves in the course of time mortgaged the land granted to them so that a large proportion of the religious land became the private property of the mortgagees without a chance of its ever being redeemed. Lands dedicated to the Shwethalayaung Pagoda by Anawrata and Minyè Kyawzwa were rededicated by Sinbyushin in 1783 A.D. In 1802 A.D. the year of the Second Inquest it transpired that as only 94 *pè* remained out of the orginal 1236 *pè* (the balance having dwindled away or become *ahmudansa*), Naungdawgyi had ordered that revenue was to be levied on the religious land and the amount collected to be kept separate and expended on the pagoda.

This conversion of *wutmye* into *nemye lôkmye* appears to have been characteristic of the 18th century. *Daing ahmudans* were granted *wutmye* belonging to various pagodas and monasteries and had to pay writer's fees, in addition to the usual revenue of one *viss* of lead and a *pyi* of rice, to the *wut* collectors. *

Tenure prior to Annexation.

From Mindôn's time onward only two important categories of land existed——*yegun* land and *pèdaw*. *Pèdaw* included (1) service land, (2) non-service land let to tenants of the King at such rents as were obtainable varying from 5 up to 50 baskets *per pè* according to the fertility of the land and the size of the *pè*. Service land paid no rent or revenue of any kind; the payment of a *viss* of lead *per pè* and clerk's fee was no longer exacted. *Yegun* land paid eight baskets *per pè*. † It was no longer possible to obtain an hereditable title by clearing and cultivation of jungle land; all such land was brought on the register of *pèdaw*.

Cultivated Area and Revenue before Annexation.

The area of *yegun* and *pèdaw* irrigated land in the middle of Mindôn's reign is ascertainable ‡ from a copy of a manuscript of Pagan *Wundauk*, U Po, who was *wun* of Kyauksè in 1882-83, but which appears to be partly a copy of an older manuscript dated 1867.

Koyan, i.e. Pèdaw ...	...	50,697	*pès*
Yegun	...	17,860	,,
Pyan-set or abandoned	...	12,304	,,
Total	...	80,861	*pès* or (say) 161,722 acres.

* Ayemaso Sulezedaing Sittans, 1145 B.E.

† O.S.R. pages 20 and 22.

‡ Copy taken by U Ba Thein Advocate, Kyauksè, Author of *Kokayaing Thamaing*.

The revenue collected on the above area is not known but the assessment would have been somewhat as follows :—

Yegun, 17,860 *pès*, at eight baskets ...	1,42,180
Koyan, 50,697 *pès*, at (say) 15 baskets	7,60,455
	9,03,335

All that reached the royal granary was the *yegun* revenue and rent on so much of the *koyan* land as was let to non-service men. Probably 15 baskets per *pè* of *koyan* land is an over-estimate, for the biggest assessment (erroneously called collection) recorded, was eight lakhs of baskets by the Yenangyaung *Mingyi*, *Wun* of Kyauksè, from 1869 to 1873. An early Deputy Commissioner makes it a collection of 20 lakhs and an early Chief Commissioner in enjoining the Irrigation Engineer to take the canal administration under King Mindôn as a shining example commits himself to the statement that 21 lakhs of rupees had been collected in that King's time.* This is absolutely mythical. The truth about the Yenangyaung *Mingyi's* collection is †; for two years running, 1869—1870, King Mindôn required a supply of 20 lakhs of paddy from Kyauksè District. He paid at a rate higher than the market rate for all, except what was due as revenue or rent of royal land. King Mindôn regularly held a store of paddy as a famine precaution and the balance was sold off at low rates before the next year's crop was on the market. In 1869 and 1870 purchase from Kyauksè was more organized than usual and in the handling of large sums of money by subordinate officials there was doubtless a good deal of peculation for which the cultivator suffered.

In King Thibaw's time the land revenue was occasionally farmed—in 1883 for four lakhs and in 1885 for five lakhs of rupees. ‡ By this time the majority of the soldiers had accepted monthly pay and surrendered their land. § The rents of land so surrendered were now due to the crown and were collected by the farmer of the taxes. The four and five lakhs went to the royal treasury and did not include any amounts due to the soldiers as rent of their land. The *thathameda* was never farmed. Five lakhs of rupees off the

* Instructions issued to Executive Engineer, Kyauksè, dated 20th March 1888, in the District Record Room.

†. Statement of Maung Ba, ex-*Myothugyi* of Myinzaing.

‡. District Record Room, Report by Mr. D. J. A. Campbell, dated 29th July 1888.

§. Statement of Maung Ba, ex-*Myothugyi* of Myinzaing.

irrigated area probably meant a heavier demand than the Yenangyaung *Mingyi's* eight lakhs of paddy, and was exacted at a time when owing to general disorganization of the Government the people were less able to pay.

Incidence. Of the condition of the people immediately after King Thibaw's deportation we have several independent descriptions: "The same poverty, due to overtaxation in Burmese times, is apparent in the dress of both men and women. There are no really rich families in the district. * It is extraordinary to find the population in the richest tract of a fertile district eating coarse food where they grow rice, living in huts raised not more than a foot from the ground, the roof hardly ever re-thatched, and the walls woven of bulrush stalks so loosely as hardly to screen the interior, possessing no holiday clothes . . . and heavily indebted. . . . In the absence of other explanation the only conclusion can be that the cultivators do not enjoy the profit of the land they cultivate and are over-taxed." †

These descriptions are still applicable to a considerable proportion of the population. The number of ruined pagodas and occasional mention of *thugywès* or rich men in inscriptions may perhaps hint that conditions were not always so bad. There must have been a change for the worse from the date of the tender of monthly pay to soldiers and the surrender by them of their land. In practice the "tenant" of service land was a relation of the soldier who supported him during his turn of service and received similar support when his turn came. When surrendered the land was cultivated by a man who paid on an average 15 baskets a *pè* and who was a yearly tenant of the king. Such tenancies must have borne harder on the people than the old amicable family arrangement combined with the security of the tenure guaranteed to the soldier and maintained by the vigilance of his commanding officer.

and System of Assessment. To any one knowing the district under British administration, certain questions may occur. What was the system of remission of revenue on areas where the crop failed? Were crop failures normally assessed? Did the assessment vary with the crop grown? What was the machinery employed for fixing of rates, crop-marking and revenue collection?

Well informed cultivators to whom such questions may be put usually preface their remarks by the statement that

* Upper Burma Gazetteer, Part II, Volume I, page 508.

† Mr. Bridges' Note in Mr. Westlake's Settlement Report.

"there were no fixed principles." It appears, however, that there was an attempt to adhere to certain principles, though no doubt with varying success. An official called the *pè-ôk* was steward of the royal estate. He or his subordinate the *lègaung* made arrangements for allotting lands to cultivation. Whenever possible, considerable areas were given to individuals or groups at a fixed assessment which was to be paid irrespective of the area cultivated. In other cases, the assessment was on the area cultivated and was at rates approximating to the standard rates already given, whether the crop succeeded or failed. In theory at least there was no remission. Methods of revenue recovery were drastic and effective. The usual form of process was torture. There was not the present multiplicity of crop rates. There was no extra charge for *kaukyin* or early sesamum preceding the main crop. There was no reduction if a cultivator chose to grow beans instead of rice on rice land. Certain crops, however, paid higher rates—plantains 10 baskets of paddy in the second year and 40 in the third, sugarcane 30 baskets, *pèmyit* 20 baskets.

The machinery for revenue assessment and revenue collection is known to have varied from time to time. It is not worth while to say more than that generally the *pè-ôk* was the assessor and the *sègyi* the collector.

Incidence in 1719 A.D. and 1881 A.D.

One important fact which emerges from a comparison of the records of 1791 with those of King Mindôn's time is that without any considerable increase in the cultivated area the revenue or *yegun* on what is now called *bobabaing* land, increased from 2 to 8 baskets per *pè*. That is an increase of 300 per cent. in paddy and of much more in cash. In 1795 the price of 84 lbs. of rice at Ava was rupee one.* In King Mindôn's time the price of a 75-lb. basket was Rs. 3-4.† Assuming that the price of paddy had increased in the same proportion, for every rupee paid on *bobabaing* land in the end of the 18th century the cultivator was in King Mindôn's time paying more than Rs. 14. In addition to his revenue he had to work on canals.

From these facts it should be clear that the Burman Government had no intention of giving the *bobabaing* owner lenient treatment in the matter of assessment. He was paying over a tenth of his gross produce. The cultivator of *pèdaw* paid about twice as much—at the same rate as

* Symes' Embassy to Ava, page 326.
† Upper Burma Gazetteer, Part I, Volume II, page 167.

was paid or supposed to be paid by tenants of service land to the allottees and clearly the Government considered itself entitled to the full rental value of such lands.

It will also be clear that there is nothing in the contention now sometimes made that *bobabaing* land paid only water rate while State land paid both water rate and land revenue. It is tempting to translate *yegun* as water rate or water revenue, but the *bobabaing* owner paid his water rate in work on the canals and *yegun* is simply land revenue. If further proof were needed, it can be found in the fact that the *thathameda* on unirrigated tracts was Rs. 10 *per* household, while irrigated tracts paid Rs. 6.* The Rs. 10 included land revenue. The Rs. 6 excluded it.

Thathameda. In November 1888 the Deputy Commissioner reported that according to custom at the time of the annexation *thathameda* was levied at the rate of Rs. 6 *per* household, except in Paleik, Paukmyaing and the Kankunnaywa, where the rate was Rs. 10 *per* household. Paukmyaing meant the non-irrigated area west of the Samôn, which formed the Paukmyaing Township after the British occupation, while Kankunnaywa was a group of seven villages on the lower reaches of the Minyè Canal, including Tawma, Daunggyi, Kanhla, Chaungbat, Monbin, and Mogaung, which cultivated their land by water from the Minhla Tank, and may have been assessed at a higher rate, on account of enjoying a more certain supply of water than villages which were dependent on canals alone. The six rupees rate was paid by those who lived inside the irrigated area and had to contribute labour towards the maintenance of the channels. Paleik was also in the irrigated area, but this village with Tabetswè and five others adjoining were included in the Mandalay District, which probably accounts for the difference in rate. †

It is not known how long the six rupees rate had been in existence.

Frontier Customs Duty. Under the Burmese Government a custom house was maintained at each of the approaches from the Shan States at which the following dues appear to have been levied :—

(*a*) Guard dues, for the support of the guards which were stationed at the custom houses for the protection of traders. These were fixed at eight annas for each bullock, and one anna and a *salè* of rice for each coolie load, and

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* Settlement Report, 1902-03, page 36.

† Report on Settlement Operations, Kyauksè District, 1890-91, page 3.

the right to levy them was, according to the Upper Burma Gazetteer, farmed out for the annual sum of Rs. 12,000.

(*b*) Three rupees were charged on each bullockload of goods and eight annas on every ten rupees' worth of goods. The right to collect these dues on all goods except tea was farmed out annually for 16,000 rupees, and the farmer was called the *Taunglan pwèok*.

(*c*) Tea presumably paid the same five *per cent ad valorem* rate as other goods, but the right of collection was farmed out to a special individual called the *Myauklan pwèok* for Rs. 70,000.

Nothing was levied on goods going into the Shan States.*†

Revenue was also obtained by the leasing of ferries and fisheries, and the right to hold bazaars at pagoda festivals.

The evidence of the *myosa* and *myedaing thugyi* of Mekkhaya embodied in a *sittan* dated B.E. 1163 (1801) includes the following remarks:—

According to custom of commission, if wood or bamboo is cut each *da-ma* pays four annas. If a buffalo or ox die, there is the right of eating the rib flesh. When the revenue is checked and paid there is the right of taking 6 annas for each *pè* of land. If a basket of tea is bought and sold, the buyer has to pay one rupee, and the seller one rupee; if goods are bought and sold by weight, on every hundred rupees worth bought and sold, the buyer has to pay one rupee, and the seller one rupee as brokerage. For every ox load, there is a right to four annas commission. As regards petty articles of commerce for every three *zès*, one anna is collected. As regards landing stages, there are a total of five at Tanlebin, Tabè, Ywathit, Sinngon, and Kalèwunpadè. For every hundred baskets of paddy bought and sold, the seller and buyer have each to pay one rupee and two annas, a total of two rupees and four annas. If there is a *myosa*, *pwè*, bazaar, and landing stage revenue are paid to the *myosa*. If there is no *myosa* it is paid direct to the Treasury.

It must be remembered that the above schedule of bazaar and landing stage commissions payable to government was in force more than a century ago, and changes had probably taken place before the reign of King Thibaw and the annexation.

* Gazetteer of Upper Burma and Shan States, Part II, Volume I, page 509.

† Kokayaing Thamaing page 9.

B. Post—Annexation.

Rates of Land Revenue. The following rates for State land were fixed in 1887 by the Deputy Commissioner in consultation with officials of the old regime and they probably approximate to the scale of rents levied on the same lands immediately before the annexation.

Kaukkyi Paddy.

Canal.		Baskets *per pè.*	Commutation rate.	Rate *per* acre.
			Rs.	Rs.
Kyimè (Upper)	...	20	65	7·43
Kyimè (Lower)	...	20	65	7·43
Minyè ..	...	17	70	6·80
Paleik North ...	...	17	70	6·80
Paleik South ...	...	17	70	6·80
Myaungzon ...	...	17	70	6·80
Zidaw ...	...	17	70	6·80
Tamôk ...	...	17	70	6·80
Ngapyaung ...	...	16	70	6·40
Thindwè ...	...	15	70	6·00
Pyaungbya ...	...	15	65	5·57
Kunsé ...	...	15	70	6·00
Nathlwè ...	...	15	65	5·57
Tôngyi ...	...	13	70	5·20
Nganaingzin ...	...	12	65	4·46
Minhla *kan* ...	...	10	65	3·71
Nwadet ...	...	15	65	5·57

Note.—1 *pè* = 1·75 acres.

Kaukyin.

			Rs.	Rs.
Kyimè (Upper)	...	19	60	6·51
Kyimè (Lower)	...	15	60	5·14
Minyè ...	...	18	60	6·17
Paleik, North	...	16	60	5·49
Paleik, South	...	16	60	4·49
Myaungzon .	...	18	60	6·17
Zidaw ...	...	20	60	6·86
Tamôk ...	...	18	60	6·17
Ngapyaung ...	...	11	60	3·80
Thindwè ...	...	18	60	6·17
Pyaungbya ...	...	10	50	2·86
Kunzè ...	...	15	60	5·14
Nathlwè ...	...	19½	50	5·57
Tôngyi ...	...	15	60	5·14
Ngalaingthin...	...	13	60	4·46
Minhla *kan* ...	...	18	50	5·14
Nwadet ...	...	...	...	...

Mayin.

Canal.	Basket *per pè.*	Commutation rate.	Rate *per* acre.
		Rs.	Rs.
Tamôk	9	50	2·57
All other canals except Nwadet.	10	50	2·86

The following water rates were fixed for *bobabaing*:—

Crop.	Baskets *per pé*	Cash *per pe.*	Commutation price.	Rate *per* acre.
		Rs.	Rs.	Rs.
Kaukyin ...	8	...	65 or 70	2·97 or 3·20
Mayin or *kaukkyi*	8	...	65 or 70	2·97 or 3·20
Kaukyin and *kaukkyi.*	15	...	65 or 70	5·57 or 6·00
Plantains (small)...	8	...	65 or 70	2·97 or 3·20
Plantains (large)...	...	15	...	8·57
Peas ..	...	10	..	5·71
Sugarcane ...	40	...	65 or 70	14·85 or 16·00.

Betelnut palms on *bobabaing* paid Rs. 50 *per* thousand trees and onions paid Rs. 10 *per* hundred *viss*.

The Original Settlement, 1890-91. The Original Settlement of Kyauksè District was carried out by Mr. S. St. J. Westlake in 1890 and 1891. Between the pacification of the district and the settlement, an improvised revenue scheme was put into effect, as has already been noticed in this chapter, in which the rates and methods of collection were framed by the Deputy Commissioner in consultation with officials of the old regimè, and based upon the principles in force under King Thibaw. As the country settled down, there was a marked progressive increase in the amount of revenue yielded by the irrigated area of the district. Thus in 1886-87 State Land Revenue amounted to Rs. 53,935, in 1887-88 to Rs. 1,31,007, in 1888-89 to Rs. 2,35,625, in 1889-90 to Rs. 2,90,096, and in 1890-91 to Rs. 3,70,513. Previous to the settlement no land revenue was imposed on the unirrigated area west of the Samôn nor upon the Yeyaman Hill-tract. The former, in lieu of land revenue paid an enhanced *thathameda* of Rs. 10, as compared with Rs. 6 in the irrigated area; the

latter has never been settled and now pays Rs. 5 *thathameda* and no land revenue. Mr. Westlake's settlement of Kyauksè which dealt with an area of 549 square miles was the first of its kind carried out in Upper Burma, and it was not considered wholly satisfactory, which was not surprising, as the officer was obliged to work in the face of great difficulties such as a small establishment, faulty demarcation, and ill-health, in a complicated district, unaided by precedent and knowledge of the conditions prevailing in the newly annexed regions. Mr. Donald Smeaton, the Financial Commissioner, remarks that the Settlement Report is defective and disappointing and that Mr. J. E. Bridges, the Commissioner of the Eastern Division, concluded his review of it by rejecting its conclusions *en masse*. The Financial Commissioner, however, considered that it contained facts and figures of permanent importance and proceeded to explain its more obscure passages, which the Settlement Officer himself was unable to elucidate owing to his untimely death soon after the completion of the operations. Mr. Smeaton's description of the methods employed is worthy of quotation ;—

"The Settlement Officer's method was as follows. He took no account of differences in soil. In respect of the paddy cropped areas he considered only two matters :—

(*a*) Position of land with reference to the supply of water from the canals, *i.e.*, certainty and sufficiency or otherwise of irrigation.

(*b*) Description of crop habitually grown on the land.

In this I think Mr. Westlake was right. On the great Kyauksè plain there is but slight variety in the texture of the soil. I have traversed the entire tract. It is an imperceptibly undulating plain of clayey loam. It would have been misleading to have attempted any classification based on the appearance of the soil. Any attempt to combine minute soil differences with differences in the water supply would have landed the Settlement Officer in hopeless complication, and would have produced results which, for practical purposes, could hardly have been trusted. This was recognised at the conference. Discarding all questions of soil, therefore, Mr. Westlake set himself to classify on consideration of water supply and crop. He found that the vast compact bulk of the land habitually grew *kaukkyi* alone. The areas habitually growing *kaukyin* alone and *mayin* alone and the twice cropped areas (*kaukyin—kaukkyi*, *kaukkyi-mayin*), were small and

a good deal scattered. The area habitually growing garden and miscellaneous crops was considerable and scattered in varying proportions all over the district.

The Settlement Officer accordingly considered the total area on which he was operating under six heads :—

(i) Habitually *kaukkyi*-cropped area ;
(ii) Habitually *kaukyin*-cropped area ;
(iii) Habitually *mayin*-cropped area :
(iv) *Kaukyin-kaukkyi* (twice-cropped) area ;
(v) *Kaukkyi-mayin* (twice-cropped) area ;
(vi) Garden and miscellaneous area.

The Settlement Officer termed the first five of these heads, *i.e.*, those concerned with paddy "fertility tracts", and divided the first two tracts into five "crop classes," and the remainder into four "crop classes," according to their reaped outturns and favourable or unfavourable positions as regards water supply. As regards rates he submitted alternative proposals to Government :—

(i) That fertility tracts numbers one to three should pay one-fifth of their assumed gross produce, and tracts numbers four and five one-eighth of their assumed gross produce. Each crop class in the fertility tract would pay the same proportion of its assumed outturn.

(ii) That a single share of one-sixth should be taken for all fertility tracts and crop classes. He calculated that the first of these alternative assessments would yield Rs. 3,91,970 on State lands and Rs. 75,667 on private lands, as against Rs. 3,81,004 and Rs. 67,977 respectively obtained under the pre-settlement rate. This would have been an increase of Rs. 10,966 on State land and Rs. 7,689 on private land, and would have meant an incidence of Rs. 4·5 *per* acre on State land, and Rs. 1·9 on private land. If a single share of one-sixth was taken, the resulting assessment would have been Rs. 3,51,129 on State land and Rs. 79,696 on private land. The Settlement Officer's proposals as to private land rates are difficult to fathom through lack of explanation. They were not adopted.

The Government of India, after they had perused the report, stated that they were not prepared to sanction any rate which might be framed upon it, but left it to the Local Government's discretion to introduce such new rates for five years as might be found, on further consideration, sufficiently applicable. They proposed that the Deputy Commissioner should be allowed discretion to apply the rates proposed in the report to such extent and in such

manner as he might, under the instructions of the Commissioner and the advice of the revenue authorities, consider to be fair and equitable for a period of five years or any less period.

At the end of five years a revision of assessment based on more certain data would be made.

Before the revenue rates were finally sanctioned, it was decided that the Settlement Officer's classification was unsuitable in some places, and in others had become obsolete owing to the extension or improvement of irrigation. Consequently in 1893-94, the Deputy Commissioner (Major W. A. W. Strickland, I.A.) modified the classification of *kaukkyi* and *kaukyin* in 105 *kwins* in the Zawgyi Tract and three in the Panlaung Tract, in most cases raising the classes by one step.

Rates on State land were finally sanctioned under Revenue Department Notifications Nos. 193 and 194, dated 15th May 1894, the first dealing with paddy and the second with other crops. The paddy rates sanctioned were to be the rates of assessment of State paddy lands only, and were to take effect from 1st July 1894. In all *kwins* in which important changes in the supply of irrigation might take place the classification was liable to revision from time to time during the period of settlement. Two rates, the initial and the maximum, were fixed for each class of paddy, *kwin* by *kwin*. The initial rates were to be levied during 1894-95; the maximum rates which were based on one-fifth of the gross produce might not be exceeded by any alterations in assessment which might take place during the ensuing five years. Initial rates did not exceed Rs. 6 *per* acre, and maximum rates did not exceed Rs. 7-8-0.

Rates on crops other than paddy grown on State land were :—

	Rs.
Betel vine	20 *per* acre.
Sugarcane	12 " "
Betel palm	12 " "
Plantains (irrigated and full grown) ...	8 " "
Goa beans	8 " "
Orchards; Tobacco; Onions; Chillies; Turmeric; *Pein-u*; *Myauk-u*; Tomatoes; Gram; Wheat.	3 " "

All other crops Rs. 1-8-0 *per* acre.

On all lands bearing no crop in any season of any year, the assessment was to be Re. 1 *per* acre if irrigated and 4 annas *per* acre if unirrigated.

As regard private land and *thathameda,* the Financial Commissioner stated it would be necessary to consider:—

(i) The assessment of land revenue on all private lands in Kyauksè including Paukmyaing township (the unirrigated area).

(ii) The abolition of *thathameda* on the agriculturists of the district in accordance with the draft directions to Settlement Officers in Upper Burma.

At the same time, he thought that perhaps it would be advisable not to interfere with the present system of *thathameda* in Kyauksè for another year, when it would be possible to find out how the new State land rates were working. Then it would be possible to apply the revenue rates (reduced, say, by 25 *per cent.*) to all private lands and to abolish the *thathameda* assessed on agriculturists.

Accordingly the assessment of non-State land to revenue, which had been proposed by the Settlement Officer, was postponed till 1899-1900, and water rate continued to be levied. It was fixed at half the State land revenue rates. The *thathameda* remained, as in Burmese times, at Rs. 6 in the irrigated area and Rs. 10 in the non-irrigated area.

Period between Settlements.

The first Revision Settlement of Kyauksè District took place in the years 1902 and 1903. During the years which elapsed between the first two Settlements, the maximum rates which had been sanctioned for paddy land were never put into effect. In 1899-1900 non-State land was brought under assessment; on non-State land which was irrigated from Government canals, the rate was fixed at seven-eighths of the State land rate; on non-State land irrigated from private sources or dependent on rainfall the rate was three-quarters of the State land rate.

Various changes in *thathameda* took place about this period. At Settlement it will be remembered that it was fixed at Rs. 6 *per* household in the irrigated area and Rs. 10 in the rainfall division, the distinction being due to the fact that people in the former region were required to give free labour on the canals, and received the reduction as their remuneration. In 1893-94 the system of unpaid labour was abolished, and *thathameda* was fixed at Rs. 10 throughout the district. In 1894-95 a partial return was made to the old system for, while the Irrigation Department was responsible for the maintenance of the headworks and main canals the villagers were made responsible for keeping all the distributaries in good order. This alteration was reflected in the *thathameda* rates which were reduced from

Rs. 10 to Rs. 7 throughout the irrigated area. In 1899-1900, concurrently with the assessment of non-State land to revenue, *thathameda* in the rainfall division west of the Samôn was reduced from Rs. 10 to Rs. 3, while in the area irrigated by the Zawgyi it was fixed at Rs. 5 and in the Panlaung area it was fixed at Rs. 6.

The First Revision Settlement, 1902-03. The First Revision Settlement was carried out in 1902-03 by Mr. R. A. Gibson. It dealt with the whole surveyed area of the district or 569 square miles, as compared with 549 square miles settled by Mr. Westlake, the increase in area being due to the inclusion of two *kwins* on the south-west near the border of the Myingyan District and ten in the north-west adjoining the Yeyaman Hill-tract. The Yeyaman Hill-tract and the small unsurveyed portion in the south-east of the district, together amounting to 708 square miles, were not touched by the Revision Settlement.

Mr. Gibson's methods and recommendations, may be summarised briefly as follows:—

He divided the district into the irrigated and the rainfall areas. The former he split up into seventeen assessment tracts by canals, nine tracts falling within the Zawgyi system and eight within the Panlaung System. The rainfall area, falling into five small and one large blocks, he treated as a single assessment tract. In classifying the paddy land the principal factors which he took into consideration were:—

(*a*) Facilities of irrigation,

(*b*) Productiveness of the fields based on crop cutting statistics and reputed yields of the land in each *kwin* as stated by the cultivators,

(*c*) Position of the fields in regard to their liability to flood, either from spill water of canals or by the rise of the rivers.

Differences in soil were taken into account only to a small extent.

The number of soil classes was limited to three in each of the large assessment tracts, and to two in the smaller.

In the irrigation division, varying proportions of the net produce of *kaukyin* and *kaukkyi* were recommended as a basis for assessment, owing to the character of the irrigation being different in the Zawgyi and Panlaung Systems. In assessment tracts numbers one and two (Zidaw and Myaungzon) one-fifth of the net produce was recommended, and one-fourth in the remainder of the Zawgyi area. In the Panlaung area one-third of the net produce was

suggessed for all assessment tracts. Mr. Gibson acknowledged that these proportions seemed large but considered that they were justified in view of the outlay in improvements to weirs and canals, and the cost of the annual maintenance of the irrigation. For *kaukyin* and *kaukkyi* in the rainfall division, and *mayin* wherever it was grown, one-sixth of the net produce was recommended. Paddy land planted with non-paddy crops and "ya" land in the irrigated division should pay the value of one-fifth of one-sixth of the net produce, according to high or low cost of cultivation; "ya" land, in the rainfall division, one-sixth; garden land anywhere in the district, one-tenth. The net financial result of the recommended rates (including *thathameda*) was expected to show an increase of Rs. 86,706 or 10·71 *per cent*. over the former gross demand.

The paddy rates finally sanctioned were in the case of the Zawgyi System, to be based on a proportion of one-fourth of the net produce for a period of five years and after that to be enhanced so as to represent a proportion of three-tenths of the net produce. On the Panlaung System, rates were calculated on three-tenths of the net produce to begin with, and were not subject to enhancement. Crop rates on non-paddy crops in the irrigated division were calculated on one-fifth and one-sixth of the net produce, as recommended by the Settlement Officer: garden land rates on one-tenth; "ya" land was assessed at from Rs. 2-8-0 to Rs. 0-12-0 according to its fertility. *Thathameda* was fixed at Rs. 4 *per* household in the irrigated area, and Rs. 5 in the unirrigated, with the exception of certain large and prosperous villages, with a considerable non-agricultural element, which paid at higher rates. Kyauksè was assessed Rs. 6 *per* house-hold, and Paleik, Singaing, Sabèdaw, and Myittha at Rs. 7. It was anticipated that these rates would give an immediate increase of revenue of Rs. 83,943 or 10·37 *per cent*. as compared with the expiring gross demand.

As regards the differentiation of revenue rates on State and non-State lands, it was decided that *ya* of both kinds should pay the same rate, but, in the case of lands other than *ya*, the non-State should pay one-eighthless than State.

In 1911, when the enhancement of rates in the Zawgyi irrigation area became due, the Deputy Commissioner, recommended that on account of the floods to which the area was liable and on account of the failure to effect the anticipated improvements in the canal system, the lower rates should be maintained permanently. The Commissioner, however, recommended that the lower should be maintained

for only one year more on the ground that the people had suffered a series of bad seasons, and in accordance with his opinion the enhanced rates were sanctioned with effect from 1912.

The Second Revision Settlement. The term of settlement sanctioned after the First Revision Settlement expired in 1916, but it was decided to postpone fresh operations till 1918, and they were not actually commenced till the following year. The grounds for undertaking this re-settlement were the fact that the two previous settlement operations were of a summary nature, of too short a duration for the full investigation of the complicated conditions of the area, and signs that the district was suffering from over taxation. The Second Revision Settlement, under the charge of Mr. J. A. Stewart, M.A., M.C., I.C.S., was still in progress when this gazetteer was compiled.

Other Sources of Revenue. Methods of collection in the sources of revenue other than land are the same as those in force in other districts and do not exhibit any special peculiarities which call for comment.

azaars. The following is a list of the District Fund Bazaars at present in existence and the average amounts for which they were sold during the eight years 1913-14 to 1920-21 :—

Township.	Bazaar.	Amount.
		Rs.
Myittha	Kumè ...	6,612
Myittha	Yamôngyi ...	4,159
Singaing	Singaing ...	1,617
Myittha	Myittha ...	3,617
Myittha	Yewun ...	2,990
Singaing	Thitkauk ...	2,789
Kyauksè	Thanywa ...	2,726
Singaing	Paleik ...	2,716
Singaing	Bèlin ...	1,941
Kyauksè	Minzu ...	1,656
Myittha	Thalun ...	1,640
Myittha	Ywakainggyi	1,616
Kyauksè	Thamandalin	1,534
Kyauksè	Hanmyinbo ...	1,512
Kyauksè	Dwehla ...	1,165
Myittha	Dayègaung ...	1,099
Myittha	Nwagu ...	1,031
Myittha	Kyauksauk I...	1,010
Myittha	Thabyedaung	927
Kyauksè	Puttaing ...	820
Kyauksè	Ywanan ...	473
Singaing	Èbya ...	72
	Total ...	46,481

The following ferries are now leased by the Distrist Fund and brought in the average amount shown against them during the eight years 1913-14 to 1920-21. **Ferries.**

Ferry.		Amount.
		Rs.
Paleik ...	...	881
Tabetswè ...	...	553
Ywabo ...	...	443
Byinnyalaw ...	...	442
Sehnitkaing ...	...	439
Mekkaya ...	...	206
Ta-ôn ...	...	105
Letpanseik ...	...	77
Ponnaywa ...	...	72
Nyaungwun ...	...	71
Sawyè ...	...	61
Kunlo-Letpangyaing	...	42
Taunggôk-Yelaung	...	37
Magyigôn ...	...	37
Bawzon ...	...	36
Wyakainggyi-Yondaw	...	32
Total	...	3,534

Other revenue statistics for the district may be found in the B Volume of the Gazetteer.

At the First Revision Settlement (1902-03) there were seven grants of land in the district which amounted to 3,769·46 acres. Their locality, the terms of the grant, and the revenue proceedings by which they were sanctioned are given in detail in Statement No. XIII of Mr. Gibson's Report. The largest is that of 2,903 acres made in perpetuity to Captain Mohamed Hussein Khan an officer of Indian cavalry and a scion of the royal house of Afghanistan, for services rendered. Another grant in perpetuity was that made to the trustees of the Shwethayaung Pagoda on Kyauksè Hill amounting to 71 acres. The remainder were life time grants made to ladies of the Burmese royal family and Maung Aung Myat the *Padin-wun*. **Grants.**

One of the grantees, the Kani *Minthami*, died in 1917 and in January 1918 it was ordered that the concession enjoyed by her should be transferred to Sir Sao Maung, K.C.I.E., K.S.M., *Sawbwa* of Yawnghwe, to lapse upon his death. The other grants mentioned in the First Revision Settlement Report still remain in the hands of the original grantees.

Leases of unoccupied State land were occasionally issued in the district up to 1904 but the practice was not encouraged. **Leases.**

In 1904 the Deputy Commissioner, Mr. Gaitskell, passed orders that all applications for leases of unoccupied lands for cultivation should be rejected. The order states that applicants in future are to be told that if they want to clear and work land they should do so, as long as none object, and the Revenue Surveyor on being informed will enter them as the occupants of such State land as they bring under cultivation. If the Assistant Collector considers that there were special grounds for granting a lease, he shall forward the proceedings and a report to the Collector. It would seem that no leases of State land have been issued in the district since 1904.

Fisheries.

At present the licenses of all the fisheries in the district are auctioned by the Irrigation Department, with the exception of four, which are still retained by the District authorities, *i.e.*, Sheingyaw, Bayan, Inya Kaung-hmudaw, and inpetlet, all in Singaing Township. On 24th May 1909 the following fisheries were handed over by the Deputy Commissioner to the Irrigation Department, as they were entirely dependent on water obtained from that department:—Inya, Thingadôn, Myogayu, Taôn, Mônbin, Min, Kyi, Myitkyo, Shwelemu, Biluma, and Sunyè. Of the above, the Min and Kyi Fisheries were thrown open to the public on 3rd May 1915, and 4th September 1916, respectively.

The following list shows the fisheries of which the licenses were auctioned by the Irrigation Subdivisional Officer, Kyauksè, in 1920-21 and the amounts realised.

			Rs.
1.	Nwadet Canal	...	200
2.	Ngapyaung Canal	...	15
3.	Kunzè Canal	...	230
4.	Thindwè Canal and Sunyè *in*		1,050
5.	Minyè Canal and Minhla Tank		160
6.	Tamôk Canal	...	360
7.	Zidaw Canal	...	300
8.	Myaungzon Canal	...	300
9.	Monbaungson	...	170
10.	Paleik *in*	...	1,550
11.	Inya ...	...	600
12.	Thindaung Escape	...	350
13.	Myogayu and Thingadon		1,080
14.	Myitkyo Myit No. 1	...	110
15.	Myitkyo Myit No. 2	...	395
	Total	...	6,870

CHAPTER X.

Local Self-Government; Old Kyauksè Municipality; the Reformed Municipality; the District Council.

The only municipality in the district is that of Kyauksè Town. It was constituted on 11th February 1888 under the Upper Burma Municipal Regulation No. V of 1887, and the Committee originally consisted of six *ex-officio* and seven nominated members. The Municipality was reconstituted on 1st April 1903, under the Burma Municipal Act of 1898, and the Committee from that date to the introduction of the scheme for a reformed Municipality in 1921 has consisted of three *ex-officio* and six nominated members. The duties of President have been performed by the Deputy Commissioner and those of Vice-President by the Civil Surgeon. The average percentage of attendance at Committee meetings for the twenty years 1900 to 1920 was 63·90 and the percentage ranged between 52·88 and 71·79 from year to year. The brunt of the work has usually fallen on the *ex-officio* members, the remainder having shown themselves apathetic. Some Deputy Commissioners, particularly Major Strickland (1894—99), have taken a great interest in municipal administration.

Old Kyauksè Municipality.

The boundaries and population of the municipality have fluctuated considerably. Between 1891 and 1901 the population of the town decreased from 7,201 to 4,520. In 1902 it rose to 7,246 owing to the extension of the municipal limits, but by 1911 it had fallen again to 5,877. In 1912 the boundaries of the municipality were extended all round, including five fresh villages and increasing the municipal area by about 50 per cent. Since 1912 no further alterations in the municipal area have taken place.

In the matter of finance, the opening balance on 1st April 1889 was Rs. 3,330, and the receipts and expenditure during that year amounted to Rs. 6,035 and Rs. 7,167 respectively. The receipts in the previous year, the first of municipality's existence, had been Rs. 8,485 but this included Rs. 2,965 *thathameda* collected within the municipality and wrongly credited to the municipal fund. In 1888-89 the municipality erected a bazaar at a cost of Rs. 2,453, and in 1892-93 a loan of Rs. 2,00,000 was taken to build an improved bazaar. In the early days, income was mainly derived from fees and revenue from markets and slaughter-houses. In 1890-91 a tax on houses was introduced and levied at the rate of Rs. 1-6-0 *per* house half-yearly.

The incidence was distributed by assessors and it was regarded as an increase of the *thathameda*, with the result that the municipality become unpopular. In 1892-93 a tax on animals and vehicles of the nature of a wheel-tax was introduced and realised Rs. 1,133. In 1894-95 road and ferry tolls were introduced and realised Rs. 1,277. Now the principal source of income is the auction of the bazaar license and bazaar stall rents, which during the period 1915-16 to 1920-21 have produced over Rs. 12,000 annually; other sources are conservancy charges and grants from Government and Local Funds.

Total receipts have shown a fairly steady increase throughout the history of the municipality. During the nineteen years 1901-02 to 1919-20 they have averaged Rs. 29,384 a year. The incidence of taxation is calculated on the whole of the entries under "Municipal Rates and Taxes" which includes "Tolls on Roads and Ferries" as well as "Tax on Government buildings and residences of public servants." Even on this wide basis the incidence is low, the average for the last twenty years being Rs. 1-5-4 *per* head of population. The so-called conservancy tax is not included in the above calculation as it is a payment for services rendered.

The chief heads of expenditure are general administration, lighting, conservancy, hospital, markets, and slaughter-houses. In early days the municipality maintained a police force of one sergeant and eight constables at the yearly cost of Rs. 1,510 but this charge was withdrawn when the cost of the Military Police ward in the hospital was placed on the municipality. At present conservancy and the hospital are the principal heads of expenditure, averaging Rs. 7,346 and Rs. 6,851 a year for the last nineteen years.

In his report for 1914-15 the President criticised the system on which the municipal revenue was raised and expended. He says "It is startling to find tolls and wheel-tax amounting to nearly as much as all the other taxes together." He objected to the tolls as being a kind of octroi and to the system of leasing the bazaar, more especially the practice of leasing the collection of daily bazaar fees while the municipality itself collects the rents of the covered stalls. He points out that east of the railway, in the main part of the town, there were only 53 lamps while there were 22 in the civil station: also that the whole area contained only 30 rubbish bins, of which 10 were in the civil station. After various other criticisms he suggests

that the finances of the municipality should be reorganised throughout. However no change seems to have taken place.

The Reformed Municipality. In September 1920 the Local Government announced its intention of making as much advance as possible towards the introduction of self-government into municipal institutions. In the following month a meeting of the Kyauksè municipal committee considered the Local Government's proposals and passed resolutions as to the elective system which they considered most suitable for Kyauksè.

Their recommendations were subsequently embodied in the Municipal and Local Department's Notification No. 131, dated 20th April 1921, which made the following rules:—

There shall be constituted for the Kyauksè Municipality a committee having authority thereover and consisting of—

(*a*) Eight inhabitants of the Municipality selected in the manner prescribed to represent wards of the Municipality.

(*b*) So many inhabitants of the Municipality not exceeding three as the persons selected under clause (*a*) and any appointed under proviso (*i*) below may co-opt to be members of the Committee. Provided that—

- (i) when the whole number of eight persons is not elected under clause (*a*) the Commissioner of the Division may fill by appointment the places so left vacant.
- (ii) The persons elected under clause (*a*) and any appointed under proviso (*i*) may decide not to co-opt any member under clause (*b*).
- (iii) The previous approval of the Commissioner shall be obtained to the co-option of Government servants.

For election purposes the Municipality was organised by the existing wards in the following manner:—

Sugyi, Zedan and Binzu Wards	...	2 representatives.
Sugôn, Aukchaing, Emyathazi, Nyaungchaukpin, Tadalè and Yèzu Wards	...	2 "
Minywa and Pyilônnaing Wards	...	1 representative.
Bawgawadi, Sizôn and Pauktaw Wards	...	1 "
Paungywa Ward ...	...	1 "
Kanu Ward	...	1 "

As regards the representation of the non-Burman element it was felt that if voting was by wards, it would be impossible for the Indian inhabitants of the Municipality to return a candidate. At the meeting held in October 1920, when the resolutions as to the reformed committee were

passed, it was resolved that one non-official should be nominated to represent each of the European, Mohamedan, and Hindu communities. This resolution however was not embodied in the electoral rules. Shortly before the first municipal election was held a petition was put forward asking that the Indian colony might be allowed one elected representative on the committee, but the request was proffered too late and the polling was too near for any alteration to be made then in the electoral rules. The question of their representation remained undecided at the time when this chapter of the gazetteer was written.

An inhabitant of the Municipality must fulfil the following conditions in order to enjoy the right of franchise:—

He must be possessed of immoveable property to the value of Rs. 100 within the municipal limits, or he must pay either a monthly rental of Rs. 4, or yearly rates and taxes amounting to Rs. 3; or, if he is an employee living rent free in his employer's house, the monthly rental value of his residence must be Rs. 4.

Qualifications for candidates for election to the Municipal Committee are the possession of immoveable property within the municipality to the value of Rs. 500 or the occupation of land or house property within the Municipality with a monthly rental value of Rs. 8, or the payment of rates and taxes amounting to Rs. 10 yearly, or, in the case of an employee living rent free in his employer's house, occupation of quarters with a monthly rental value of Rs. 8.

The first Municipal Election was fixed for June 1921, but had to be postponed and was actually held on 27th August 1921. On that date there were 833 names on the electoral roll.

The District Council.

The scheme for the District Council had not reached a sufficiently advanced stage for inclusion in this gazeteer.

CHAPTER XI.

EDUCATION.

Introduction; Controlling Agencies; Collegiate Education; Secondary Education; Number of Secondary Schools and Results of the Vernacular VII Standard Examination; Primary Education; Number of Primary Schools in the District; Technical Education; Female Education; Number of Girls' Schools in the District; Mohamedan Education; Christian Mission Schools; Private Institutions; Teachers; Itinerant Teachers and Training Classes; Scholarships; Educational Boards; Finance; Local Co-operation.

Education in Kyauksè District, formerly known as the *Ledwin-Kokayaing*, may be said to have begun about 1100 A.D. when King Anawrata of Pagan came on tour to the *Kokayaing* and founded many monasteries, where he afterwards encouraged learning and introduced the *Tripitaka* from Thatôn. From that time till the annexation of Upper Burma in 1885 such education as existed was given generally in monastic schools, the principal subjects being Pâli, astrology and a little arithmetic. History relates, however, that the people of the *Kokayaing* were remarkably ignorant in the time of the Burmese Kings and the Bhamo *Sayadaw* and the Thingaza *Sayadaw* agreed that the *pongyis* of the *Kokayaing* were ill-educated. For five centuries before the annexation Kyauksè District was the granary of the Burmese Kings and their courtiers and retainers, and the people, finding a means of subsistence in agriculture, were quite apathetic to education. **Introduction.**

The Education Department first took charge of Kyauksè District in 1890 when it was included in the Northern Circle. Three years later the District was amalgamated with the Meiktila Sub-circle of the Central Circle and it became a separate sub-circle in 1901. Records show that the Director of Public Instruction has paid up to date three visits to the district to inspect schools, namely, in August 1895, in December 1907, and in December 1910. The earliest Annual Report available is that for the year 1896-97, which shows that there were then only 30 registered schools for boys with an enrolment of 673 pupils.

The following are the Deputy Inspectors of Schools who have been employed in the district since 1890 under the Education Department:— **Controlling Agencies.**

Maung Mon from 1st April 1889 to 4th April 1892.
Maung Po Kyin from 5th April 1892 to 17th May 1896.
Maung Maung from 18th May 1896 to 3rd August 1898.
Maung Pu from 4th August 1898 to 23rd June 1905.
Maung Tun Zan U from 24th June 1905 to 29th September 1907.
Maung Ba Kin from 30th September 1907 to 22nd June 1914.
Maung Ba Tun from 23rd June 1914 to 1st October 1914.
Maung Su from 8th September 1915.

In Burmese times very few monks from the *Kokayaing* appeared for the *Patamabyan* examination and after the

British occupation nobody from the district took the examination till 1912, when a single monk appeared and passed. From 1916 to 1919 there were some indications that the examination was becoming more popular but in the last two years the number of candidates has again declined as the following table will show :—

Year	Number appeared for *Patambyan* Examination.	Number passed *Patamabyan* Examination.
1912-13 ...	1	1
1913-14 ...	...	...
1914-15 ...	...	...
1915-16 ...	...	...
1916-17 ...	5	1
1917-18 ...	11	3
1918-19 ...	19	4
1919-20 ...	5	2
1920-21 ...	3	1

Secondary Education. Outside Kyauksè and a few of the larger villages no demand for Secondary Education has arisen. The rural population is satisfied with a knowledge of the three R's and when children have reached standard IV the parents think they can be more usefully employed in the fields where their labour helps to ease the burden of the elders.

The Government servants in Kyauksè District are for the most part recruited from outside and not a single headman in the district has passed standard VII. It is during the past five years only that the *Kokayaingthas* have become qualified teachers.

The statistics of Secondary Schools can perhaps best be shown by tabulating extracts from the Quinquennial Reports

Number of Secondary Schools and results of Vernacular VII Standard Examination.

Year	Number of schools.	Number of pupils.	Vernacular VII Standard Examination.	
			Number presented.	Number passed.
1896-97 ...	3	93	...	...
1901-02 ...	3	136	5	4
1906-07 ...	9	389	23	...
1911-12 ...	6	350	...	...
1916-17 ...	11	960	26	5
1920-21	8	568	25	16

The increase in the number of schools and pupils in 1916-17 was due to an attempt of the Deputy Inspector of

Schools to increase Secondary Schools, but owing to various causes, principally lack of pupils in the middle department, some of the schools have again reverted to the Primary Grade.

Primary Education.

A demand has gradually grown up in the district for Primary Education, at least for the three R's but even here satisfactory progress is marred by irregularity of attendance, owing to the employment of children in the fields.

In the beginning the Education Department registered a large number of monastic schools, but in the course of time it was found that lay schools did better work and were more satisfactory, so many monastic schools where the monks were ignorant and apathetic were transferred to the private list in order that the remaining schools might receive more aid from Government and more attention from inspecting officers. The fall in the number of registered schools after 1918 in a large measure can be thus explained.

The following statement from the Quinquennial Reports shows the total number of schools and pupils as compared with the present number, namely, 110 schools with 5,434 pupils :—

Number of Primary Schools in the District.

Year.	Number of schools.	Number of pupils.
1896-97 ...	30	673
1901-02 ...	67	1,563
1906-07 ...	105	3,187
1911-12 ...	[illegible]7	2,371
1916-17 ...	155	5,434

Technical Education.

Besides sewing which is now compulsory for girls, the only technical subject taken up in Kyauksè District is school gardening, which was first introduced by Lieutenant-Colonel Cronin, Deputy Commissioner, in 1912. Through his encouragement ten school gardens were started and exhibitions of fruit and vegetables were held annually. Now the number of school gardens has risen to 16 and the work is directed by a Sub-Inspector of School Gardens who was appointed to Meiktila Circle in 1913 after he had undergone a course of training in Ceylon.

Female Education.

In the time of the Burmese Kings the education of women was almost completely neglected. No girls were allowed to study in monasteries, nor were there any lay schools. Some nuns only, who studied at Sagaing, knew the *Tripitaka*. Since 1900 female education in the district

has made considerable progress. There are at present 52 female teachers most of them qualified and the Elementary Training Class for girls at Kyauksè will yearly augment the number. There are two lady members on the District Advisory Board and they give very valuable advice on matters affecting the education of girls.

Girls' schools are yearly visited by an Assistant Inspectress of Schools whose headquarters are at Rangoon. It is now proposed to have several Inspectresses of Schools and female Deputy Inspectors of Schools.

Number of Girls' Schools in the District.

Year.		Number of Girls' Schools.	Number of Pupils.
1896	...	..	...
1901	...	11	272
1906	...	14	448
1911	...	14	380
1916	...	13	612
1921	...	28	905

Mohamedan Education.

In the Kyauksè District there are many Mohamedan villages where mercenary troops, chiefly artillerymen employed by the Burmese Kings, settled and inter-married with Burmese women. It is perhaps worthy of note that some of these Zerbadi communities are more interested in education than the Burmese and that their headmen and elders are more ready to spend money on schools than the Burmese Buddhists. In the villages of Hinngu, Sulegôn, Letpan, Palanbo, Kanlu, Tabetswè and Dainggaungkan there are Mohamedan schools which have been built by the villagers at their own expense. In all these seven schools the vernacular is Burmese, the people having lost the language of their forefathers by long residence amongst the Burmese.

In Kyauksè Town there is a Mohamedan school in which Urdu is the vernacular. This school was built with a donation of Rs. 1,000 given by Sir A. K. Jamal, who still subscribes a monthly sum. The leading Mohamedans of Kyauksè take an interest in education and endeavour to improve the school as far as their means permit.

Christian Mission Schools.

Three Missionary Societies have taken up educational work in the District, the Wesleyan Methodist Mission, the S.P.G. and the French Roman Catholic Mission. The first has been by far the most successful. It established an

Anglo-Vernacular Middle School at Kyauksè in 1888 which is still flourishing and in 1904 a Vernacular School for girls was founded at Kyauksè by the Rev. W. Vickery. There are now 80 girls on the roll and the school is perhaps the best girls' school in the Meiktila Circle. There is also a Wesleyan Methodist Mission Girls' School at Thagara.

The S.P.G. has confined its work principally to Myittha where it has opened an Anglo-Vernacular Primary School. For some years the numbers were small, but last year they reached 50. The people of Myittha value the school and have given it liberal financial support.

The Rev. Joseph Bazin opened a Roman Catholic School at Chanthagôn in 1890 and in 1898 he had about 90 on the rolls but numbers have since fallen and at present the total is about 30.

There are 10 Christian churches in the district, seven of them Roman Catholic, but the number of Christians is inconsiderable.

Private Institutions. As the number of private educational institutions is more or less dependent on such information as Deputy Inspectors of Schools can gather on their tours, the returns are generally inaccurate, but the following statistics are given for what they are worth :—

Year.	Number of Schools.	Number of pupils.
1896-97 ...	326	2,308
1901-02 ...	404	3,205
1906-07 ...	506	3,222
1911-12 ...	482	3,007
1916-17 ...	414	2,318

The returns for the present year give 346 private schools, all *pongyi-kyaungs* teaching generally only religious knowledge and a little Burmese, though some take arithmetic also.

In order to encourage monks to learn and teach arithmetic, the *Mulagananthincha* Examination for monks was introduced in 1915. The standard set was about that of Vernacular Standard IV only but the number of passes in Kyauksè District was small. In 1919 when the examination had been established five years, it was found that the object for which it was instituted had not been attained as few or none of the monks who passed took up teaching. They entered for the examination merely to gain the reward of Rs. 25 given by Government.

Teachers. When the Education Department took over control in 1900, there were in Kyauksè District only nine lay teachers, three qualified and six unqualified. The number and qualifications of teachers have since gradually improved as may be seen from the statistics below:—

Kinds of Teachers.	1896-97.	1901-02.	1906-07.	1911-12.	1915-16.	1921.
Higher Grade Teacher	...	...	...	...	2	2
Secondary Grade Teacher ...	...	3	6	7	15	20
Primary Grade Teacher ...	4	5	16	17	18	32
Elementary Grade Teacher ...	...	...	...	...	14	30
Uncertificated Teacher	26	64	88	56	136	75
Total ...	30	72	110	80	185	159

Itinerant Teachers and Training Classes. To improve the methods of teaching in the schools the Education Department appointed three Itinerant Teachers to the Kyauksè District in 1904 with headquarters at Kyauksè, Myittha and Singaing, respectively, but as the system proved unprofitable the Itinerant Teachers were withdrawn in 1909. Instead, Elementary Training Classes were instituted for the training of teachers of low qualifications, the minimum standard of education being a pass by Standard IV. This system has proved much more beneficial and the number of such classes has increased yearly. No Elementary Training class for boys has yet been opened in Kyauksè District but last year a class for girls was established at the W.M.M. Girls' School, Kyauksè, where 15 to 20 girls will be trained annually as teachers. In its first year the class was very successful, the standard of work being higher than that of the three classes for boys in Meiktila Circle.

Scholarships. There is one Special Scholarship in the Kyauksè District namely the King Edward Memorial Anglo-Vernacular Scholarship founded in 1912 with a surplus of Rs. 2,000 from the subscription fund for the celebration of the Coronation of King George V. The scholarship, which is worth Rs. 15 a month, is confined to boys who are too poor to pay for their education in an Anglo-Vernacular School. The scholarship is awarded on the result of the Verncular Fourth Standard Examination.

As the other scholarships in Kyauksè District are similar to those for the whole province there is no necessity to mention them here.

Educational Boards.

From 1890 to 1917, education, both Anglo-Vernacular and Vernacular, was entirely controlled by the Education Department. In the year 1917, the control of Vernacular Education was, with some reservations, transferred to Divisonal Boards. Soon after the institution of the local boards, District Advisory Boards were unofficially appointed in each district to help and advise the Divisional Boards and to arouse local interest in education. After a short time, Township Boards were also introduced and Village School Committees. In the Kyauksè District now every village and every township has its committee or board and the local interest thus stimulated has been most beneficial. The Headmen's Groups, too, at their monthly meetings discuss educational matters, and forward their suggestions to the District Advisory Board through the Deputy Commissioner. It may be mentioned that the Headmen's Groups system was introduced into the District in 1917 by Mr. J. L. McCallum, the Deputy Commissioner of Kyauksè. The number of groups is now 21.

Finance.

Up to 1916 the amount allotted from Provincial Funds for education in Kyauksè District was inconsiderable. Schools were paid by results chiefly and as education was very backward the grants earned were proportionately small. The following table will show that in the last five years expenditure on Vernacular education has donbled :—

Heads of Expenditure. (1)	1915-16. (2)	1916-17. (3)	1917-18. (4)
	Rs.	Rs.	Rs. A. P.
Secondary Schools.	2,720	2,416	3,369 8 0
1. Results Grants, Primary ...	5,534	5,954	8,193 4 0
2. Full Salary Grants ...	656	680	704 0 0
3. Half-Salary Grants ..	2,479	2,396	3,664 0 0
4. Permanent Salary Grants	645	606	708 0 0
5. Temporary Salary Grants	2,304	2,152	4,801 0 0
6. Salary Grants for Elementary Teachers.	...	...	1,179 0 0
7. Salary Grants for Primary Teachers.	...	...	258 0 0
8. Stipends and Scholarships	...	...	384 0 0
9. Grants for books ...	150	...	...
10. Grants for Gardens ...	271	...	...
11. Building Grants ...	...	...	600 0 0
Total ...	14,759	14,204	23,860 12 0

Heads of Expenditure.	1918-19.	1919-20.	1920-21.
	Rs. A. P.	Rs.	Rs.
Secondary Schools	3,733 4 0	2,726	1,091
1. Results Grants, Primary ...	8,330 0 0	6,688	6,027
2. Full Salary Grants ...	720 0 0	750	5,028
3. Half Salary Grants ...	3,565 0 0	6,078	4,679
4. Permanent Salary Grants	1,200 0 0	6,078	5,146
5. Temporary Salary Grants	6,728 0 0	4,058	3,668
6. Salary Grants for Elementary Teachers.	3,160 13 0	1,104	1,032
7. Salary Grants for Primary Teachers.	605 0 0	810	...
8. Stipends and Scholarships	450 0 0	296	296
9. Grants for books ...	50 0 0	40	40
10. Grants for Gardens ...	...	110	120
11. Building Grants ...	...	...	...
Total ...	28,342 1 4	28,738	27,127

Last year all other systems of payment were replaced by the salary system under which teachers earn at least a living wage which is paid regularly. Increased expenditure is chiefly due to the increased salaries paid to teachers.

Kyauksè District has been very lucky in having many village headmen and elders who take a keen interest in education. Amongst others the following headmen deserve special mention :—

U Noot of Hinngu.
U Kasin of Kanlu.
U Po of Nyaungbingyi.
U Khin of Dayègaung.

The name of the first has appeared in every Educational Report of the Deputy Inspectors of Schools since 1890 as a man keenly interested in education and ever ready to assist the departmental officers.

CHAPTER XII.

PUBLIC HEALTH.

Kyauksè Town; Kyauksè district; Water-supply; Hospitals; Vaccination; Conservancy.

Kyauksè Town.

Statistics of births and deaths have been recorded in Kyauksè Town since the year 1899, and in the district deaths have been recorded since 1903 and births since

1907. The number of births *per mille* in Kyauksè Town (calculated on a population of 7,201) was 11·67 in 1899 and 35·00 in 1900. Probably the registration was incomplete in the former year. From 1901 to 1903 the figures calculated on a population of 5,420 were 41·51, 57·01 and 55·17. In 1904 and 1906 the figures calculated on a population of 7,246, were 37·81 and 37·12; figures for 1905 are not available. The mean ratio of births *per mille* in the towns of Upper Burma for the years 1902-06 was 36·64. The annual reports of the Sanitary Commissioner do not give the birth-rate for Kyauksè Town in 1907 and subsequent years. In 1899 and 1900 the death-rate in Kyauksè Town (population 7,201) was 21·39 and 26·21 *per mille*. From 1901 to 1903 (population 5,420) it was 32·47, 43·73 and 64·58. From 1904-10 (excluding 1905 and 1909 for which figures are not available) the average death-rate on a population of 7,246 was 40·05. From 1911-17 on a population of 5,877 the death-rate was 46·45 *per mille* The mean death-rate in the towns of Upper Burma for the years 1912-17 was 42·27. On the whole both the birth-rate and the death-rate appear to be slightly higher than the average for Upper Burma towns.

The birth-rate for Kyauksè District was 37·94 and 38·85 in 1907 and 1908 on a population of 139,605. In 1910 on a population of 141,253 it was 37·22 and from 1911-18 on a population of 141,426 it averaged 40·12, the provincial birth-rate for the same period averaging 33·86. The death-rate for the district averaged 36·88 from 1903-08 (excluding 1905) on a population of 139,605. In 1910 it was 36·89 on a population of 141,253 and from 1911-18 it averaged 42·69 on a population of 141,426. The provincial death-rate for the period 1911 to 1918 averaged 27·26. The high death-rate of the district is due to excessive mortality under the heads of "Fevers" and "Other causes" which in the period 1911-18 averaged 12·27 and 29·06 against provincial means of 9·57 and 14·00. The prevalence of malaria in the Kyauksè District has been frequently commented upon by the Sanitary Commissioner in his Annual Reports. In the 1917 Report (paragraph 19) he says "Investigation of the vital statistics returns for the last ten years (1908-17) shows that the supposed loss by emigration (the explanation given for the fact that the population was practically stationary between 1901 and 1911) is mythical and that on the contrary such migration as took place merely served to replace an actual loss by natural

Kyauksè District.

causes. This district has suffered far less than others from epidemic diseases. Small-pox is practically unknown and only 1,800 deaths were recorded as due to cholera during the decade, plague claiming 455. The deaths during the period from fevers totalled 14,330 and those under the heading 'all other causes' totalled 41,181. These undoubtedly included many deaths due to malaria. Evidence as to the extent to which irrigation is responsible for the prevalence of malaria in this and other irrigated districts is at present inconclusive. In such districts non-irrigated areas exist which are relatively free from malaria. The existence of low jungle in the neighbourhood of the hills appears to be a constant accompaniment of malaria but in some such places in non-irrigated country the endemic index is quite low . . . the indications are that malarial prevalence could be greatly reduced by improved surface-drainage and conservancy of canal water." Apart from malaria, Kyauksè District is almost free from the ordinary diseases of the province. The deaths *per mille* from cholera averaged ·58 a year in the period 1911 to 1918, from small-pox ·08, from plague ·29, from dysentery and diarrhoea ·23, and from respiratory diseases ·11. The classification, however, which is in the hands of the village headmen, is admittedly unsatisfactory, the majority of deaths being ascribed to "Old Age," "Infantile Diseases" or "Fever" There was a severe epidemic of influenza at the end of 1918 and beginning of 1919 but accurate statistics of the deaths due to this cause are not available.

The death-rate among infants is extremely high, as is usual in Burma, and something of the nature of an itinerant dispenser, who could visit the villages and give treatment and advice would appear to be an urgent necessity.

Water Supply. There are 13 public wells in Kyauksè Town, of which 5 supply good drinking water, while the others are brackish. Water for cooking and washing is obtained from the Zawgyi River and the Minyè and Tamôk Canals which run through the town.

The water-supply of the district is fairly good. There is water in the rivers, canals and distributaries available nearly everywhere for the greater part of the year; in the hot weather difficulty is sometimes experienced in getting water for cattle, while the canals are closed for the annual unsilting.

In the non-irrigated areas a few villages suffer from a perennial lack of drinking water due to the absence of wells.

Their inhabitants have made attempts to get water by sinking wells, but their efforts have not been successful, and they are obliged to draw their supplies by water-cart from rivers or the wells of their more fortunate neighbours. For this purpose journeys of a mile are sometimes necessary.

There is one hospital at Kyauksè in charge of the Civil Surgeon and a Sub-Assistant Surgeon, and another at Myittha in charge of a Sub-Assistant Surgeon. The following table shows the number of patients treated in the Kyauksè Hospital during the years 1911-20:— **Hospitals.**

Year.	No. of out-patients.	No. of in-patients.	Total No. of patients.
1911 ..	8,915	653	9,568
1912	9,647	767	10,414
1913 ...	8,875	742	9,617
1914 ...	9,252	753	10,005
1915 ...	9,713	750	10,463
1916 ...	10,077	723	10,800
1917 ...	10,106	731	11,137
1918 ..	10,617	735	11,352
1919 ...	10,491	734	11,225
1920 ...	10,167	682	10,849

The average cost *per annum* of the hospital during these ten years, excluding pay of medical officers was Rs. 8,957. Sanction has been given for the addition of a maternity ward.

Vaccination. One supervisor and three vaccinators are employed in the district. During the decade 1911—20 the average number of vaccinations performed *per annum* was 5,607 and the average cost of the work during the same period was Rs. 2,435. In May 1921 returns were obtained from village headmen, showing the percentage of villagers who had been vaccinated. The following table shows the average of these percentages by townships:—

Kyauksè	..	...	77·26
Singaing	...	...	68·39
Myittha	...	...	78·00

Conservancy gangs are only maintained in Kyauksè, Myittha, and the largest villages. On the whole, the sanitation of villages is fairly good. They are usually built upon slight rises in the ground, which ensures a certain amount of drainage. There is one District Sanitary Inspector, who visits the villages and submits monthly reports on their sanitary condition. **Conservancy.**

CHAPTER XIII.

MINOR ARTICLES.

Kyauksè is the headquarters of Kyauksè District, Subdivision, and Township. It stands upon both banks of the Zawgyi River, immediately below the western end of Kyauksè Hill, which rises to a height of 977 feet. It derives its name from the weir on the Zawgyi River, from which the Minyè and Tamôk Canals take off, the former on the right bank of the river, the latter on the left bank. A short distance lower down the Zawgyi is another weir whence the Zidaw Canal takes its water. According to tradition Kyauksè Weir was built by King Narapadisithu of Pagan (1166—1204) and the Zidaw Weir by King Mingyi Swasawkè of Ava (1367—1400). The age of the town is uncertain. It probably grew up gradually after the construction of the weir and foundation of a *sè-bin* village. It was for some centuries prior to the annexation the administrative headquarters of the *Kokayaing*, which comprised the irrigated parts of the present Kyauksè district. The *wuns* of the *Ngakayaing* and *Lekayaing* (Zawgyi and Panlaung irrigation systems) both appear to have lived here. In Burmese times there was heavy boat traffic upon Zidaw Canal which was the main line of communication between Ava and the *Kokayaing* Kyauksè was the head of navigation upon this canal and it probably owes its selection as an administrative headquarters to this fact. Since the annexation and the construction of the railway, the water traffic has ceased, but Kyauksè is still an important centre of communications owing to the railway station fed by a system of roads which radiate to Bèlin, Dwehla and Myittha.

The chief objects of antiquarian interest are the Thayaung Pagoda, on the top of Kyauksè Hill, built or repaired by King Anawrata of Pagan (1044—77) who deposited in it a replica of the sacred tooth which he had sought in vain to secure from the Emperor of China; the Shwemôktaw Pagoda, east of the bazaar, reputed to be the weir pagoda of the Kyauksè Weir; and the ruined site of Myinzaing, the city built by the Shan King, Yazathingyan in the 4th century A.D. at the eastern end of Kyauksè Hill. The trace of the walls of Myinzaing can still be seen plainly, surrounding a brick-strewn area which contains the remains of two large but much damaged pagodas.

The modern Kyauksè had a population of 5,877 in 1911. It forms the only municipality in the district, and is divided for administrative purposes into sixteen wards: Sugyi, Minywa, Pyilônnaing, Zedan, Binzu, Aukchaing, Emyathazi, Sugôn, Yèzu, Bawgawadi, Pauktaw, Paungywa, Nyaungchaukpin, Tadalè, Sizôn, and Kanu. The inhabitants are traders, Government employees, shopkeepers, agriculturalists and coolies. No important manufactures are carried on in the town. The casting of plough coulters is practised on a small scale. There are several Indian shops, which sell European goods, the only bazaar in the district which is held daily, two small rice mills, a co-operative bank and a hospital. The town also contains an Anglo-Vernacular school, maintained by the Wesleyan Methodist Mission, in addition to several Burmese and one Mohamadan school. An interesting institution is the Burmese Academy, Kyauksè. Originally this body was called the "Society for promoting Burmese Literature" and was founded under that name in 1906 In January 1915 it was reconstructed and its rules were amended, and it received its present name, the "Burmese Academy, Kyauksè." Its objects are defined as follows (1) to collect and preserve ancient literature of all kinds, (2) to promote the study of literature of all descriptions, (3) to protect ancient monuments, (4) to encourage arts and sciences.

Two pagoda festivals are held in Kyauksè, in honour of the Shwethayaung Pagoda, in *Tabaung* and *Thadingyut*.

The civil station is situated in the angle between the Zawgyi River and Zidaw Canal. It contains the offices of the Deputy Commissioner and the Subdivisional Officers of the Public Works Department, a club, and the military police lines. It is connected with the bazaar and railway station by a substantial stone bridge which crosses the Zawgyi River, a short distance below the Zidaw Weir. Near the hospital are the remains of the race course and grand stand, which have not been used for some years.

Kyauksè Subdivision comprises the whole of the district lying north of a line which begins at the point where the Zawgyi river enters the district from the Shan hills, and runs south-west for a short distance to the headwaters of the Tôngyi *chaung*, thence along the Tôngyi *chaung* to its junction with the Panlaung River. The boundary of the subdivision then follows the Panlaung as far as the Myingôndaing bend, whence it runs due west, crossing the Samôn River at Pônnaywa, to a point about two miles west

of the Samôn, where it turns north-north-east till it joins the district boundary.

Kyauksè Township.—The southern border of the Kyauksè Township is the same as the southern boundary of the Kyauksè Subdivision.

On the west the township is separated from Sagaing District by the Samôn as far as its junction with the Panlaung. On the north, the boundary line runs from the confluence of the Samôn and Panlaung along the Panlaung as far as Ngazu Village, thence due eastwards, crossing the railway line at Bèlin, till it turns north to Tônbo Village, and thence due east again to the border of the Yeyaman Hill-tract. The eastern border of the township is formed by the escarpment of the Shan hills.

Singaing Township.—The southern border of Singaing Township is the same as the northern boundary of the Kyauksè Township. The western and northern boundaries are the district boundaries, *viz.*, the Samôn and Myitngè Rivers. The eastern boundary is the escarpment of the Yeyaman hills.

Singaing, the headquarters of the Singaing Township, is a village with a station on the main line of the Burma Railways. It is the centre of an area in which sugarcane is grown and crushed by small rollers worked by a pair of buffaloes. The population is principally composed of cultivators and coolies, with a few cartmakers. There is the usual five-day bazaar and one or two very small shops.

There are two rice mills at the village, one maintained by private enterprise, the other, opened in 1921, a co-operative undertaking. The people of this village were originally members of the *anaukwin* regiment of the Burmese army.

Paleik, on the banks of the Myitngè River, before the annexation was a place of importance, owing to its situation at the point where the Zidaw Canal, formerly a much used waterway, joined the Myitngè. Much of the paddy of the *Ngakayaing* was probably exported to the capital by this route. It was the scene of much silk-weaving, particularly the *acheik* pattern used at the Burmese court. The importance of the village has been destroyed by the opening of the railway and the disappearance of navigation on the Zidaw Canal, and in consequence its population fell by some fifty *per cent.*, during the decade 1911—21 as there is no longer sufficient work to maintain the former numbers. The only remains of its former activity is a small export

trade by water of sugarcane and garden and *ya* produce grown in the neighbourhood of the village.

Myittha Subdivision and Township.—Comprises the whole of the district south of the Kyauksè Township.

Myittha.—Myittha was one of the eleven villages known as the *lèdwin sètaywa* which are said to have been founded in Kyauksè by Anawrata, King of Pagan (1044—77). Under the later Burmese Kings it was a place of some importance in the *Lekayaing*, the southern part of the *Kokayaing*, watered by the Panlaung irrigation system. It appears, however, that the *Wun* of the *Lekayaing* lived at Kyauksè and not at Myittha. The town is situated on the main line of the Burma Railways and is the headquarters of the civil, revenue, police, irrigation and postal officials of the subdivision of Myittha. The population in 1921 was 3,600. At first sight this seems a great advance on the 2,800 of 1911, but the adjoining village of Taungbettat with its 100 houses was included in the 1921 figures, as well as a considerable number of people who had temporarily come from the Meiktila District owing to shortage of crops there. There are no industries of a manufacturing kind in the town and the people can be roughly classified as traders, cultivators and coolies. The trade with the Shan hills by the Lungyaw route has been considerably smaller since the opening of the Southern Shan States Railway to Aungban and many of the Chinese merchants have transferred their business there. The chief articles of trade are paddy, dry chillies, cotton, *thanatpet*, ground nuts, onions, garlic, saltfish, dried prawns, and salt. There are two Burmese vernacular schools in the town as well as a Chinese school and a small Anglo-Vernacular school. The chief pagoda is the Shwemôktaw with an annual festival in the month of *Tabodwè*. The Shwesawlu Festival in the month of *Kasôn* has been discontinued since the annexation.

Dayègaung is a prosperous village on the banks of the Samôn River, and near the rich plantain-growing area of the Sama Canal. Its inhabitants were formerly members of the Shan cavalry regiment of the Burmese army. After the annexation it was for some years the headquarters of the Paukmyaing Township, which included the unirrigated area west of the Samôn, and was subsequently absorbed in the Myittha Township. The office of the former *Myoôk* is now used as a travellers' bungalow.

Ywamôngyi is a village of cultivators on the left bank of the Panlaung, on the Dayègaung-Minzu Road. It has a small pottery industry, and was formerly the place where the plantains of the Sama area were loaded on boats for transport to Ava. This traffic by water has now shrunk to a very small size. As in the case of Dayègaung its people were formerly members of the Shan cavalry regiment.

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